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March 7, 2017

**HAND-DELIVERY**

Ms. Ingrid Ferrell  
Executive Secretary  
Public Service Commission of West Virginia  
201 Brooks Street  
PO Box 812  
Charleston, WV 25323

02:50 PM MAR 07 2017 PSC EXEC SEC DIV

**Re: Monongahela Power Company and  
The Potomac Edison Company  
Petition for Approval of a Generation Resource  
Transaction and Related Relief  
Case No. 17-02916-E-PL**

Dear Ms. Ferrell:

Enclosed for filing are the original and 12 copies of a petition for approval of a generation resource transaction and related relief filed by Monongahela Power Company and The Potomac Edison Company. The Petition includes eight separate pieces of direct testimony as exhibits and four other exhibits.

We have also included in a sealed envelope three sets of the confidential versions of the following documents:

- The direct testimony of Jay A. Ruberto;
- The exhibits to Exhibit RJL-1 to the direct testimony of Robert J. Lee; and
- Exhibit TS-1 to the direct testimony of Thomas Sweet.

Public, redacted versions of these documents are included with the Petition.

The Companies respectfully request a Commission decision on this matter by August 21, 2017.

Please include Christopher Callas and Nicholas Presley of the law firm Jackson Kelly PLLC as co-counsel. Thank you for your assistance.

Sincerely,

A handwritten signature in black ink that reads "Gary A. Jack (my em)". The signature is fluid and cursive.

Gary A. Jack  
Senior Corporate Counsel  
WV State Bar No. 1855

Attachments (with enclosures)

cc: Terry Eads

Caryn Short

John Auville

Earl Melton

Randy Short

Jackie Roberts (3)

Emily Medine

Derrick Williamson

Steve Baron

PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

CASE NO. 17-\_\_\_\_-E-\_\_\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of Generation Resource  
Transaction and Related Relief

**PETITION FOR APPROVAL OF GENERATION  
RESOURCE TRANSACTION  
AND RELATED RELIEF**

Monongahela Power Company (“Mon Power”) and The Potomac Edison Company (“PE,” and together with Mon Power, the “Companies”) jointly petition the Commission for prior consent and approval pursuant to W. Va. Code § 24-2-12(c) and (f), § 24-2-2, and § 24-2-3 of a generation resource transaction (as described below, the “Transaction”) and related relief. Due to actual and projected load growth, the Companies’ forecasted capacity requirement in 2020 is 3,988 megawatts (“MW”), but Mon Power’s available capacity resources are projected to be only 2,983 MW, assuming a possible sale of Mon Power’s interest in the Bath County facility handled through a separate Request for Proposal.<sup>1</sup> This equates to a 1,005 MW deficit in the amount of generation capacity needed to serve West Virginia customers. This deficit is projected to increase each year, reaching a deficit of approximately 1,439 MW by 2027. Mon Power, through an outside expert trained and experienced in developing and operating requests for proposals (“RFP”), sought and received bids to eliminate or at least reduce this deficit. Pleasants Power Station, owned by Allegheny Energy Supply Company LLC (“AE Supply”), was the clear and unequivocal winner of the RFP with a price approximately one eighth (1/8)

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<sup>1</sup> If there is no sale of Bath, the PJM-recognized capacity resources would be 3,209 MW.

(for the equivalent 1300 MW of installed capacity) of the next closest conforming bid received. Pleasants also prevailed on other attributes, such as a West Virginia location within the APS zone of PJM (including more favorably within the Mon Power service territory), positive impacts on the local and state economies, and its familiarity and ease of integration to Mon Power, that make it an extremely desirable asset for the Companies, their customers, and the State of West Virginia. Taken as a whole, the Transaction will remedy the Companies' capacity deficiency until the projected 2021/2022 year, facilitating Mon Power's provision of reliable, low-cost electricity for years to come, and will also provide a number of important customer and economic benefits, including immediate and meaningful rate reductions to customers as of the date of closing.

## **I. EXECUTIVE SUMMARY**

On December 30, 2015 in Case No. 15-2002-E-P, the Companies filed an Integrated Resource Plan ("2015 IRP") with the Public Service Commission of West Virginia ("Commission") that identified a significant shortfall in generation compared to its load over the ensuing fifteen-year period. Based on more current load forecasts than those used in the 2015 IRP and the expected impact of the proposed sale of the Bath County Project, the Companies have identified a capacity shortfall of approximately 1,005 MW by 2020 that rises to 1,439 MW by 2027. Without an investment in additional capacity, Mon Power's current and projected generation resources will not protect the Companies' West Virginia customers against an undue reliance on capacity and energy markets that can show dramatic fluctuations over time.



In December 2016, Mon Power issued two RFPs: one to address the capacity shortfall through a combination of approximately 1,300 MW of unforced capacity (“UCAP”)<sup>2</sup> generation and up to 100 MW of demand resources (“Capacity RFP”); and a separate RFP for the sale of Mon Power’s 16.25% interest in the Bath County Project (“Bath RFP”). Mon Power engaged Charles River Associates (“CRA”), an independent and nationally recognized consultant, to assist in the preparation, administration and evaluation of both RFPs. Realizing that an affiliate of the Companies could submit a bid responsive to the Capacity RFP, Mon Power directed CRA to structure the Capacity RFP and its administration and bid evaluation processes in a way that ensured an open, fair, transparent, and non-discriminatory process, and one in which neither Mon Power nor any affiliate would be able to gain or benefit from any undue advantage or preference. In his direct testimony, Robert Lee, Vice President of CRA, explains the aspects of the Capacity RFP designed to achieve these goals.

The winning bidder under the Capacity RFP was AE Supply, which offered its 100 percent ownership interest in the Pleasants Power Station, a supercritical coal-fired generating facility of 1,300 MW nameplate capacity (1,159 MW UCAP in 2021) located in Willow Island, West Virginia (“Pleasants”). No other bidder was close to the winning bid, in terms of price and non-price factors. The winning bid price of \$195 million is far lower than the next bidders who were roughly at \$1.66 billion for an equivalent amount of generation capacity. Additionally, the plant is located within the Companies service territory and will support the local and state economy, including West Virginia coal production and the Marcellus Shale gas industry. Mon Power has determined that an acquisition of Pleasants, under the terms of the Capacity RFP and

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<sup>2</sup> Unforced capacity is what PJM procures to satisfy its Reliability Pricing Model reliability requirement. Installed capacity values are higher than unforced capacity values because unforced capacity takes into account the probability of outages and de-rates a unit’s capacity value from its installed capacity value based on prior performance.

at the purchase price bid by AE Supply, will be a valuable and cost-effective addition to Mon Power's generation portfolio.

In this Petition, the Companies will identify the many benefits associated with the Transaction, and demonstrate why Mon Power's acquisition of Pleasants is in the best interests of customers, the Companies, and the state of West Virginia. The Companies also believe that the sale of its interest in the Bath County Project is a likely outcome, but the Companies continue to review the bids submitted in response to the Bath RFP before electing whether to sell and to whom.

**A. Mon Power's Resource Adequacy Situation**

The Companies have a forecasted capacity requirement in 2020 of 3,988 MW. Mon Power's available capacity resources are projected to be only 2,983 MW of UCAP (assuming the sale of Bath), so there is a deficiency of 1,005 MW of UCAP needed to serve West Virginia customers. By 2027, the Companies' forecasted capacity requirement increases by another 387 MW, to 4,375 MW. Mon Power's available capacity resources at that time are only projected to be 2,935 MW of UCAP, which translates to a capacity deficiency of 1,439 MW of UCAP. As Mon Power's capacity shortfalls increase over time, its dependence on market power purchases will substantially increase absent a robust, reliable capacity resource solution. In order to address the Companies' capacity deficiency, Mon Power proposes to acquire Pleasants as the best solution to address that deficiency, and one that will provide concomitant benefits to West Virginia. While the Companies also sought demand response ("DR") bids as part of its RFP, no DR bids were submitted or received.

In a separate but related effort, Mon Power has pursued a sale of its ownership interest in the Bath County Project due to recent Capacity Performance ("CP") changes in the PJM capacity

market that will diminish the cost-effectiveness of using the facility to provide capacity revenue to customers. CRA reviewed the submitted bids, and assuming a transaction is finalized, Mon Power intends to submit a filing with the Commission.

The Companies selected the Transaction as the best and most economically competitive solution among the responses to the Capacity RFP and that which is better for West Virginia customers than increasing reliance on wholesale energy and capacity markets. Acquiring Pleasants is expected to provide Mon Power with the resources to hedge its energy and capacity obligations through 2027 and thereby promote rate stability for the Companies' customers.

**B. The Transaction Will Have Direct Customer Benefits**

The Transaction is expected to bring a number of significant benefits to the Companies' customers and the community. First and foremost, the Transaction will provide Mon Power with a net increase in installed capacity of 1,300 MW. This net capacity increase is expected to provide Mon Power with sufficient generation resources to meet the Companies' capacity requirements through 2027 based upon current estimates. The Transaction also will permit the Companies to meet their customer load requirements, reducing the need to rely on unpredictable wholesale energy and capacity markets. The need to cover this capacity deficit is the primary motivation for Mon Power's proposal to acquire Pleasants, and this need alone serves as the compelling reason for the Commission to approve it.

The Transaction represents a significant addition to Mon Power's West Virginia utility assets that also has the potential to create financial benefits for customers over the long term. Pleasants brings with it the potential for higher net revenues from off-system energy sales --- revenues that would serve as a direct offset to fuel and purchased power costs that customers pay in the Companies' Expanded Net Energy Cost ("ENEC") rates. Moreover, the acquisition of this

needed generation resource will enhance and solidify Mon Power's asset base and increase its overall capitalization --- improvements that, over time, could be expected to yield more favorable debt cost rates, directly benefitting the Companies' customers.

While customers are expected to realize the Transaction's market hedging benefits, the State and surrounding communities should also gain the security of knowing that Pleasants is a reliable utility asset and a proven contributor to the economy and well-being of West Virginia for years to come. Simply put, Pleasants is a facility with access to cost effective coal resources along the Ohio River. It has the latest pollution control equipment and has benefited from upkeep and continuing modernization, positioning it well for years of productive service.

Pleasants is also well known to Mon Power, since Mon Power was an original owner of the facility (25% owner) when the plant opened in 1979. Mon Power continued to own an interest in the plant until 2013, when the Commission approved Mon Power's sale of that interest to AE Supply at a price of \$733 per kW. Today, less than four years later, Mon Power has the opportunity to buy the plant at only \$150 per kW. This Transaction provides real benefits to Mon Power and the state of West Virginia.

Pleasants currently employs approximately 200 employees, purchases coal from the regional area, and, as stated in Dr. John Deskins's direct testimony, provides an economic benefit to the state and region of more than \$395 million. Absent this Transaction, AE Supply will likely either sell Pleasants to another party or retire it as FirstEnergy Corp. ("FirstEnergy") has announced its plans to exit the competitive generation market by mid-2018. A retirement of Pleasants would jeopardize the employment, taxes, and economic benefits it has provided.

### C. The Transaction's Components

The Transaction is comprised of several components, each of which is integral to the Companies' overall proposal.

(i) *Pleasants Transaction*: Mon Power will purchase the Pleasants plant from AE Supply for the total consideration of \$195 million. As part of that price, Mon Power may assume AE Supply's repayment obligations on \$142 million of pollution control bond debt as an offset and as part of the \$195 million price depending upon whether the bondholders and Trustee permit an assignment. (If Mon Power assumes the debt on those favorable terms, the cash paid decreases in the same amount.) The Transaction will increase Mon Power's generation ownership by 1,300 MW on an installed capacity basis, and 1,170 MW on a UCAP basis. An Asset Purchase Agreement reflecting the material terms of the Transaction is attached as Exhibit 9A<sup>3</sup>.

(ii) *Temporary Surcharge and ENEC*

On the day the Transaction is closed ("Closing"), Mon Power will acquire substantial generation assets that will be used to serve the Companies' West Virginia load obligations. In order to undertake the Transaction, the Companies will need a mechanism by which they can recover a return on and of Mon Power's incremental investment in Pleasants and its expenses incurred to operate Pleasants until rates from their next base rate case have been implemented. To provide recovery of this investment and related expenses during this period, the Companies therefore request that the Commission approve: (i) a temporary surcharge ("Temporary Surcharge") to be implemented at Closing and to remain

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<sup>3</sup> Exhibits 1-8 include the Direct Testimony of the Companies' eight witnesses described *infra*.

in effect until new base rates reflecting the full amount of the Temporary Surcharge are placed into effect as a result of the Companies' next base rate case; and (ii) incremental adjustments to the Companies' ENEC rates to be implemented at Closing and to remain in effect until the next adjustment to ENEC rates expected to occur on January 1, 2019.

**D. Rates**

The Companies are proposing an overall customer rate reduction as a result of the acquisition of Pleasants. Although the Transaction will increase customer rates through the Temporary Surcharge, that customer rate impact will be more than offset by the projected ENEC revenues to be generated from Pleasants and returned to the Companies' customers during the Temporary Surcharge period. The Companies propose a \$31,486,971 net *decrease* in rates for the 16-month period of September 1, 2017 through December 31, 2018, which is a 1.6% overall decrease. This amount is comprised of a Temporary Surcharge increase of \$148,554,241 and an ENEC decrease of \$180,041,212. Residential customers will experience a decrease of about 1%, while non-residential customers in the aggregate will experience a decrease of approximately 2.2%. The decrease for a residential customer using 1,000 kilowatt-hours ("kWh") per month is about \$1 per month or \$12 per year. The table below shows the aggregate change by rate schedule.

Rate Schedule	Sep 2017-Dec 2018 Revenue	Increase/ (Decrease)	% change
A & R	\$ 801,055,991	\$ (6,890,422)	-0.9%
B & G	\$ 120,110,712	\$ (1,247,861)	-1.0%
C & E	\$ 340,732,539	\$ (4,519,820)	-1.3%
CSH	\$ 4,687,419	\$ (53,690)	-1.1%
D & PH	\$ 125,076,427	\$ (2,896,161)	-2.3%
K & PP	\$ 529,814,000	\$ (15,576,238)	-2.9%
AGS	\$ 510,338	\$ 10,791	2.1%
Streetlighting	\$ 14,121,522	\$ (313,570)	-2.2%
Total	\$ 1,936,108,949	\$ (31,486,971)	-1.6%

**E. Bath County Pumped Storage**

Regarding the Bath RFP, the Companies intend to decide soon whether to sell Mon Power's interest in the Bath County Project; if a sale is to be pursued, the Companies will seek Commission approval to the extent required in a separate filing. While the sale of Bath affects the total capacity deficiency, the Companies believe that the Transaction, on the terms and conditions presented in this Petition, is prudent whether or not a Bath sale is consummated.

**F. The Companies' Requests for Relief**

The Companies seek Commission approval of the Transaction in its entirety, inclusive of the Pleasants Transaction, certain affiliate agreement and arrangements described in this Petition, the Temporary Surcharge, and the associated ENEC rate adjustments. The components of the Transaction are interdependent, and the Companies cannot fulfill the goals of the Transaction unless all components are approved together as a whole.

## II. PARTIES

1. The business address for the Companies is provided below, as well as the mailing address, office, phone number, fax number, and email address of the Companies' representative for purposes of this filing.

Companies' Business Address	5001 NASA Boulevard Fairmont, WV 26554
Companies' Representative	Gary A. Jack, Esq. Mon Power/PE 5001 NASA Boulevard Fairmont, WV 26554 Phone: (304) 534-7409 Fax: (234) 678-2565 Email: gjack@firstenergycorp.com

2. Mon Power, an Ohio corporation, is a regulated electric utility subject to the jurisdiction of the Commission. Mon Power is an indirect, wholly owned subsidiary of FirstEnergy and operates an electric transmission and distribution system serving approximately 390,000 customers across the northern half of West Virginia.

3. PE, a Virginia and Maryland corporation, is a regulated electric utility subject to the Commission's jurisdiction related to the service it provides in West Virginia. PE is an indirect, wholly owned subsidiary of FirstEnergy and operates an electric transmission and distribution system in portions of West Virginia and Maryland. PE also operates an electric transmission system in portions of Virginia. PE currently serves approximately 140,000 customers in West Virginia and 260,000 customers in Maryland.

4. Attached as Exhibit 10 to this Petition are the Statements of Financial Condition for each of the Companies responsive to the requirements of Procedural Rules 10.9 and 21.



### **III. RFP AND SOLUTION DEVELOPMENT**

5. In order to manage its capacity needs and ensure an adequate level of generation supply for its customers, Mon Power issued the RFP seeking to acquire: (i) one or more generating facilities (existing or sufficiently in development) amounting to approximately 1,300 MW of capacity; and (ii) up to 100 MW of DR resources. Mon Power predicated the attributes of these capacity resources on the analysis conducted in the 2015 IRP.

6. Mon Power retained an independent third party, CRA, to design and administer a transparent, fair and non-discriminatory RFP process, including the solicitation of bids for available capacity resources.

7. In evaluating the submitted bids, CRA assessed each bid in terms of its cost-effectiveness, as well as how well each bid met pre-established criteria specified in the Capacity RFP.

8. CRA conducted a net present value analysis to evaluate the bids, which derives the cost of each alternative. This modeling is widely viewed as a reasonable way to compare the overall competitiveness of generating assets and technologies. Of all the bids submitted, Pleasants provided the lowest cost to Mon Power. Mr. Ruberto's and Mr. Lee's direct testimony, attached to this Petition as an Exhibit, explain this process and Mon Power's selection of the Transaction as the best available option among those considered. The details of CRA's work are found in Mr. Lee's direct testimony.

#### **IV. DETAILS OF THE TRANSACTION**

9. These are the main Transaction details:

- a. *Purchase Price.* \$195 million plus fuel, materials and supplies on hand at the date of closing. (Fuel is estimated to be \$18.1 million and Materials and Supplies is estimated to be \$6.8 million.)
- b. *Included Assets.* All Assets located at the Pleasants Power Station, Willow Island, West Virginia.
- c. *Pro-Forma Journal Entries.* Information on the accounting pro-forma journal entries for the Transaction are shown on Exhibit 11.

#### **V. FINANCING**

10. Mon Power has various options for financing the Transaction. Potential financing options include the use of a combination of long term debt, equity from Mon Power's parent, FirstEnergy, or directly from Mon Power's cash sources and/or short term debt. At the effective date of the Transaction, Mon Power could also potentially assume a \$142 million pollution control note secured by certain Pleasants assets. Should such pollution control bonds be available at Closing and beneficial to assume, Mon Power requests permission to enter into that affiliate arrangement to assign the bonds from AE Supply to Mon Power.

#### **VI. AFFILIATE AGREEMENT**

11. The terms and conditions for the Transaction are set forth in an executed definitive Asset Purchase Agreement attached as Exhibit 9A. Additionally, in case the existing

pollution control bonds at Pleasants are assigned to Mon Power, an Assumption and Indemnity Agreement to assign the bonds is attached as Exhibit 9B.

## **VII. TEMPORARY SURCHARGE**

12. *Basis for Temporary Surcharge.* Upon approval of the Transaction, Mon Power's generation assets used to serve the Companies' West Virginia load obligations will increase significantly. The revenues received by the Companies through the ENEC for Pleasants will be substantial, and the costs to produce those revenues need to be collected as well through a reconcilable Temporary Surcharge.

13. *Timing Differential.* The Companies request that the Temporary Surcharge take effect immediately on Closing and remain in place until new base rates reflecting the full amount of the Temporary Surcharge are placed into effect as a result of the Companies' next base rate case.

14. *Temporary Surcharge Design.* The Temporary Surcharge proposed is similar to the Temporary Transaction Surcharge approved by the Commission in the settlement in Case No. 12-1571-E-PC, except that the costs recovered would be reconciled with the generation revenues in the annual ENEC proceeding, with the next one to be filed by September 1, 2018. The Temporary Surcharge would provide electric plant in service treatment for the increase in assets related to the Pleasants acquisition, and would also include associated depreciation, taxes, and other non-fuel operations and maintenance ("O&M") expense.

15. *Temporary Surcharge Calculation.* The Temporary Surcharge will be calculated as the sum of non-fuel O&M expense, depreciation expense, tax expense (excluding income tax expense), plant in service relating to the increase in plant and related rate base items resulting

from the Transaction, and income taxes related to the portion of plant and related rate base items financed by equity. The details of the Temporary Surcharge are found in the pre-filed testimony of Mr. Valdes.

16. *Rate Reductions.* The Companies propose an approximate \$31.5 million net *decrease* in rates for the 16-month period of September 1, 2017 through December 31, 2018, which is a 1.6% overall decrease. This amount is comprised of a Temporary Surcharge increase of \$148.6 million and an ENEC decrease of \$180 million. The decrease for a residential customer using 1,000 kWh per month is about \$1 per month or about \$12 per year.

17. *Importance of Temporary Surcharge to the Transaction.* Whether the Companies proceed with the Transaction is dependent upon the Commission's approval of the Temporary Surcharge, as well as the Commission's reasonable assurance that components of the Temporary Surcharge will be fully recognized in base rates in the Companies' next rate case and thereafter. These investment and expense levels will be known with reasonable definition at the outset of the Transaction and presented to the Commission and the parties, and the Commission will make a final determination on them. For this reason, it would be inappropriate for those same determinations to be reconsidered or called into question in a subsequent base rate case. The Companies request that the Commission provide rate assurance that its approval of a full return of and on the increase in assets associated with the Transaction will not be reconsidered in a base rate case. The Companies therefore request that the Commission approve a Temporary Surcharge to recover these investments and expenses, and cannot proceed with the Transaction without approval of the recovery of those costs through the Temporary Surcharge.

## **VIII. IMPACT ON PLEASANTS EMPLOYEES, FUEL PROCUREMENT, AND OPERATIONS**

18. The ownership changes occasioned by the Transaction are expected to be seamless and imperceptible to Pleasants employees, providing them with similar employment opportunities.

19. Pleasants will be operated by Mon Power and the employees on site will all become Mon Power employees.

## **IX. TRANSACTION BENEFITS**

20. The Transaction is expected to provide a number of significant benefits for the Companies, their customers, and the West Virginia public generally.

- a. *Long-Term Solution to Capacity Shortfall.* The Transaction will address the Companies' capacity shortfall by increasing Mon Power's owned generation assets. The proposed Transaction is the most cost-effective alternative for adding long-term capacity resources to Mon Power's portfolio.
- b. *Greater Rate Stability.* Solving the capacity shortfall through the Transaction is expected to provide much greater rate stability for the Companies' customers. Although market prices are currently low in relative terms, Mon Power's long term load forecast predicts that weather normalized electric loads for Mon Power are expected to continue to grow at an annual rate of over 65 MW per year through 2027. This projected growth will create a capacity shortfall of approximately 1,005 MW by 2020 that rises to 1,439 MW by 2027. Hedging Mon Power against significant levels of capacity and

energy price risk through the Transaction will not only help Mon Power control its costs more effectively, but will also benefit Mon Power's ratepayers by stabilizing rates.

- c. *Increased Ability to Benefit from Off-System Sales.* The Transaction will not preclude the Companies from taking advantage of low market prices through market purchases when it is beneficial to the Companies and their customers to do so. Conversely, the Transaction will provide energy sales over and above those needed to meet Mon Power's obligation to serve the Companies' combined load when market prices increase and those sales are economical. To the extent that additional net revenues from energy sales from Mon Power's enlarged generation portfolio are generated, those revenues will serve as a direct offset to ENEC expenses, and will reduce customer rates.
- d. *Acquisition of a Modernized, Known, Proven Asset.* Mon Power's increase in owned generating assets will be gained from a proven and known West Virginia-based generating asset. Pleasants was owned by and provided service to the Companies and AE Supply from 1979 until 2013. It is a thoroughly modern facility, with a number of significant improvements and a host of important environmental control investments needed to continue cost-effective operations under existing and anticipated environmental regulations. In addition, these environmental controls achieve Mercury and Air Toxics Standards compliance primarily through modifications to existing equipment, eliminating the need for full-scale environmental control investments that some other coal-fired facilities face. These attributes complement Pleasants'

excellent record in both safety and operational performance, and position it well for years of productive service.

- e. *Local and State Economic Benefits.* Pleasants is expected to be a reliable utility asset and a proven contributor to the economy and well-being of West Virginia. Dr. Deskins' testimony addresses these factors.
- f. *Support for West Virginia Coal Industry.* Mon Power's ownership of Pleasants will support the West Virginia coal mining industry and help to preserve mining jobs over the long term. Also, much of the scrubber and ash byproduct are beneficially reused for such applications as making gypsum, wallboard, anti-skid materials for roadways, cement additives, and construction material composites.
- g. *Meaningful Rate Reductions.* The Transactions will result in immediate rate reductions, averaging from 1-3% for customers as of the date of Closing. For the average residential customer, the reduction would be approximately \$1/month.

## **X. STATUTORY TEST FOR APPROVAL OF TRANSACTION**

21. The Companies seek the Commission's prior consent and approval pursuant to W. Va. Code § 24-2-12(c) and § 24-2-12(f) for Mon Power's entry into the Transaction. Section 24-2-12 provides that public utilities must obtain prior Commission consent to engage in particular activities. Section 24-2-12(c) provides that, absent advance consent and approval of the Commission,

no public utility...may assign, transfer, lease, sell, or otherwise dispose of its franchises, licenses, permits, plants, equipment, business or other property or any

part thereof; but this shall not be construed to prevent the sale, lease, assignment or transfer by any public utility of any tangible personal property which is not necessary or useful, nor will become necessary or useful in the future, in the performance of its duties to the public....

Section 23-2-12(f) applies to transactions between affiliates, and also applies to the Transaction.

22. In considering the Companies' request for prior consent and approval of this Transaction, the Commission must determine that "the terms and conditions are reasonable and that neither party thereto is given an undue advantage over the other, and do not adversely affect the public in this state." W. Va. Code § 24-2-12.

23. In this Petition and its supporting exhibits and pre-filed testimony, the Companies will show that the Transaction, including the Temporary Surcharge, is reasonable and in the interests of the Companies' customers.

a. *Reasonableness of Terms and Conditions.* In the RFP, CRA and Mon Power assessed each bid to address Mon Power's resource requirement needs in terms of that proposed solution's cost-effectiveness. Through this process and the use of an NPV cost analysis to compare the various alternatives on a per MWh basis, CRA determined that Pleasants will provide the lowest cost, and, consequently, that Pleasants is the best available capacity resource offered in response to the Capacity RFP. Not only is the selection of the Transaction reasonable from a facilities planning perspective, but the Companies have shown that the consideration for the Transaction, developed in a competitive bidding process in which other capacity resources participated, is fair, reasonable, and in compliance with the Commission's standards for the acquisition of utility property from affiliates. In addition to these factors, the expected approval of the Federal Energy Regulatory Commission ("FERC")



of the Transaction terms under the public interest and no cross subsidy provisions of the Federal Power Act provides ample evidence of the reasonableness of the terms and conditions of the Transaction.

- b. *No Undue Advantage to Any Party.* The Transaction was a part of a competitive and fair RFP process that the testimonies of Robert Lee and Jay Ruberto describe in more detail. Because the Transaction is a result of a competitive RFP process, and is reasonable and consistent with standard practices for the solicitations of capacity resources, the consideration offered and accepted for Pleasants is presumptively reasonable. Neither Mon Power nor AE Supply enjoyed or realized an undue advantage over the other, and neither had an undue or unfair advantage over other Capacity RFP participants.
- c. *Transaction in the Public Interest.* The Companies have shown that the Transaction will have a number of important benefits to the Companies' West Virginia customers and the State in general. These benefits are explained in more detail in the direct testimonies of Holly Kauffman, Raymond Valdes, and Dr. Deskins, and show that the Transaction is in the public interest.

24. Additionally, the Companies request that the Commission approve the Transaction pursuant to its general authority under W. Va. Code § 24-2-2, and approve the Temporary Surcharge to recover the cost of service impact of the Transaction under its plenary statutory authority to enforce, originate, establish, change and promulgate rates for public utilities as set forth in W. Va. Code § 24-2-3. The Temporary Surcharge is a necessary component to the Companies' ability to complete the Transaction, and is a fair and reasonable

mechanism by which to permit Mon Power to recover the incremental investment in the acquisition of Pleasants and the expenses associated with its operation to offset the generation market revenues to be gained by selling Pleasants output into the PJM market. As noted above, Mon Power cannot complete the Transaction unless the Temporary Surcharge is approved; however, the Transaction, when consummated, will result in an overall rate reduction to customers.

#### **XI. TIMEFRAME FOR REQUESTED RELIEF**

25. The Closing is planned to occur on or before September 1, 2017. The September 1, 2017 date also comports with Mon Power's estimates of how long it will likely take to obtain the necessary regulatory approvals. AE Supply has an interest in knowing as soon as possible if its bid is accepted by the regulatory agencies or whether it is permitted to make other plans for the station. For all of these reasons, the Companies request a final order from this Commission by August 21, 2017 to allow sufficient time to coordinate with PJM and AE Supply and to complete the Closing on or before September 1, 2017.

#### **XII. OTHER REGULATORY APPROVALS**

26. Mon Power and AE Supply will seek approval of the Transaction from the FERC under Section 203 of the Federal Power Act and Part 33 of the FERC's regulations. In that filing, the applicants will demonstrate that the Transaction will have no adverse impact on competition, rates, or regulation, will not result in the "cross-subsidization of a non-utility associate company or the pledge or encumbrance of utility assets for the benefit of an associate

company,”<sup>4</sup> and accordingly is consistent with the public interest. FERC approval should satisfy this Commission as to the fairness of the Transaction as between FirstEnergy affiliates. The Companies Section 203 Application will be filed with the FERC coincident with this Petition. Approval of the FERC and this Commission are conditions to closing the Transaction.

### **XIII. WITNESSES**

27. In support of this Petition, the Companies have presented the pre-filed direct testimony of eight witnesses:

- a. Holly C. Kauffman, President of WV Operations (Exhibit 1)
- b. Jay A. Ruberto, Director of Regulated Generation (Exhibit 2)
- c. Robert J. Lee (Charles River Associates, independent operator of RFPs) (Exhibit 3)
- d. Thomas Sweet (ABB, provider of energy and capacity forecasts) (Exhibit 4)
- e. Bradley D. Eberts, Manager of Load Forecasting (Exhibit 5)
- f. John Deskins (West Virginia University, Economic Consultant) (Exhibit 6)
- g. Kurt P. Leutheuser (Project Manager, Black & Veatch) (Exhibit 7)
- h. Raymond E. Valdes, Director of Rates and Regulatory Affairs (Exhibit 8)

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<sup>4</sup> 16 U.S.C. § 824b(a)(4); *see also Transactions Subject to FPA Section 203*, Order No. 669, FERC Stats. & Regs. ¶ 31,200 at P 19 (2005) (“Order No. 669”), *order on reh’g*, Order No. 669-A, FERC Stats. & Regs. ¶ 31,214, *order on reh’g*, Order No. 669-B, FERC Stats. & Regs. ¶ 31,225 (2006).

#### **XIV. REQUESTED RELIEF**

28. For the reasons set forth in this Petition, the Companies believe that the Transaction is necessary, prudent, and reasonable under the circumstances, and otherwise satisfies all of the requirements of West Virginia Code §§ 24-2-12, 23-2-2, 24-2-3, and any other applicable code section. The Companies respectfully request that the Commission:

- a. Grant prior consent and approval of the Transaction, comprehensive of the Pleasants acquisition, the Affiliate Agreement and possible assignment of the pollution control bonds, the Temporary Surcharge, and the associated reduction in ENEC rates described in Mr. Valdes's direct testimony;
  - b. Order that the Temporary Surcharge be authorized and take effect immediately on Closing and that components of the Temporary Surcharge be fully recognized in base rates in the next base rate proceeding of the Companies and thereafter;
  - c. Retain this case, and establish a procedural schedule that will enable the Commission to grant all relief requested not later than August 21, 2017;
  - d. Waive hearing on this Petition if no meritorious protest is received;
  - e. Grant authority to perform all acts required or advisable in furtherance of or incidental to the consummation of the approved Transaction;
- and

- f. Grant such additional authorizations, waivers, approvals, and other relief as may be necessary or appropriate.

Dated the 7th day of March, 2017.

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

*By Counsel*



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VERIFICATION

STATE OF WEST VIRGINIA,

COUNTY OF MARION, TO WIT:

Holly C. Kauffman, Vice President of Monongahela Power and President of West Virginia Operations, being duly sworn according to law, deposes and says that the facts and allegations stated in the attached Petition are true, except insofar as they are therein stated to be on information, and that, insofar as they are therein stated to be on information, she believes them to be true.

  
Holly C. Kauffman

Taken, sworn to and subscribed before me this 6th day of March, 2017.

My commission expires: September 5, 2021.



  
Notary Public

Tariff Form No. 2  
(RULE 41)

REPORT ON TARIFF CHANGE

Name of utility: Monongahela Power Company and The Potomac Edison Company

Address main office: 5001 NASA Boulevard, Fairmont, West Virginia 26554

Information compiled by: Raymond E. Valdes  
Director, Rates and Regulatory Affairs

Electric Tariff P.S.C. W.Va. No. 22 (Monongahela Power Company)  
Electric Tariff P.S.C. W.Va. No. 3 (The Potomac Edison Company)

Change: All Rate Schedules

Reason for Change: Decrease in Rates

Approximate annual reduction in revenue:..... \$ 23,615,228 effective September 1, 2017

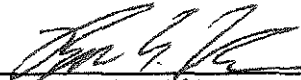
Locations affected

Estimated number of customers whose cost of service will be:

	Reduced	Increased	Unchanged
All locations served by Monongahela Power Company and The Potomac Edison Company, under the electric tariffs listed above.	527,513	2,411	76

Remarks

MONONGAHELA POWER COMPANY  
AND  
THE POTOMAC EDISON COMPANY

By:   
Raymond E. Valdes  
Director, Rates and Regulatory Affairs

(FOR COMMISSION'S USE ONLY)

Authority for filing: Formal Order in Case No. \_\_\_\_\_ Dated \_\_\_\_\_  
Statutory Notice \_\_\_\_\_ (Mark "X")  
Date Filed \_\_\_\_\_

### **Index of Exhibits**

Exhibit 1	Direct Testimony of Holly C. Kauffman
Exhibit 2	Direct Testimony of Jay A. Ruberto
Exhibit 3	Direct Testimony of Robert J. Lee
Exhibit 4	Direct Testimony of Thomas Sweet
Exhibit 5	Direct Testimony of Bradley D. Eberts
Exhibit 6	Direct Testimony of Dr. John Deskins
Exhibit 7	Direct Testimony of Kurt P. Leutheuser
Exhibit 8	Direct Testimony of Ray E. Valdes
Exhibit 9A	Asset Purchase Agreement
Exhibit 9B	Form of Assumption and Indemnity Agreement
Exhibit 10	Rule 21 Financial Information for Mon Power, PE, and AE Supply
Exhibit 11	Pro Forma Journal Entries



PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

Case No. 17-\_\_\_\_-E-\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of a Generation Resource  
Transaction and Related Relief

DIRECT TESTIMONY OF  
HOLLY C. KAUFFMAN

March 7, 2017

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Holly C. Kauffman, and my business address is 5001 NASA Blvd.,  
3 Fairmont, West Virginia 26554.

4 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

5 A. I am employed by Monongahela Power Company ("Mon Power"), and my title is  
6 President, West Virginia Operations. My time is primarily devoted to FirstEnergy's  
7 ("FE") West Virginia customers and the distribution operations of Mon Power and the  
8 West Virginia portion of The Potomac Edison Company ("PE," and together with Mon  
9 Power, the "Companies"). I do not have any operational or reporting responsibilities for  
10 FE's merchant affiliates or Mon Power's regulated generation.

11 Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL  
12 BACKGROUND.

13 A. I attended The Pennsylvania State University where I graduated with a Bachelor of  
14 Science degree in Computer Science in 1983, The University of Pittsburgh where I  
15 received a Master of Science in Industrial Engineering in 1991, and Duquesne University  
16 where I received a Master of Business Administration in 2001. I have been employed by  
17 Allegheny Energy, and now FE, since January 1984. Prior to the position detailed above,  
18 I held various management positions including general manager of operations in  
19 Pennsylvania, West Virginia and Virginia, director of Transmission Projects and Vice  
20 President, Operations for Jersey Central Power and Light. I was also project manager for

1 the TrAIL transmission project, overseeing the engineering, construction and overall  
2 project management for that major 500 kV line.

3 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

4 A. The purpose of my testimony is to provide an overview of the Companies' filing, the  
5 needs of the Companies and the customers, and the Companies' process of seeking  
6 additional generation resources and demand response in order to meet the needs of our  
7 customers in the most beneficial and cost-effective way. Also, I discuss the basic  
8 components of the transaction described in the Petition for Approval filed in this case (as  
9 described therein, the "Transaction"). These components include, but are not limited to,  
10 Mon Power's purchase of the Pleasants Power Station ("Pleasants"), a 1,300 MW coal-  
11 fired power plant located in Willow Island, West Virginia that employees approximately  
12 200 individuals. I will explain broadly the capacity shortfall problem that the Transaction  
13 is designed to remedy, and will summarize the benefits of the Transaction for the  
14 Companies and their customers in West Virginia. The Companies firmly believe that the  
15 Transaction, which was selected through an independent, competitive bidding process,  
16 will help address a capacity shortfall Mon Power has identified, and thus help to ensure  
17 an ample supply of reliable, low-cost electricity for their West Virginia customers.

18 The following list identifies the Companies' other witnesses and the subjects of  
19 their testimony:

- 1                   1. Mr. Jay Ruberto, Director of Regulated Generation for the Companies,  
2                   will discuss the details of the capacity shortfall, the request for proposals  
3                   ("RFP") process, the selection, and the details of the Transaction.
- 4                   2. Mr. Robert Lee, Vice President in the Auction and Competitive Bidding  
5                   Practice at Charles River Associates, will discuss the RFP preparation and  
6                   the RFP evaluation and selection processes.
- 7                   3. Mr. Thomas Sweet, Director, Global Reference Case, Enterprise Software,  
8                   of ABB will support the energy and capacity forecasts pricing.
- 9                   4. Mr. Bradley Eberts, Manager, Load Forecasting for the Companies, will  
10                  address the Companies' load and sales forecasts and reserve margins.
- 11                  5. Dr. John Deskins, Director of the Bureau of Business and Economic  
12                  Research at West Virginia University, will address the economic  
13                  assumptions underlying the load forecast and the impact of the  
14                  Transaction on the local and state economy.
- 15                  6. Mr. Kurt Leutheuser, Project Manager, from Black and Veatch, will  
16                  provide an independent assessment of Pleasants.
- 17                  7. Mr. Raymond Valdes, Director of Rates and Regulatory Affairs for the  
18                  Companies, will discuss the rate impacts related to the Transaction.

1                   **A.       The Process of Seeking Additional Generation Resources**

2    Q.     PLEASE DESCRIBE THE COMPANIES' EVALUATION OF THE GENERATION  
3           NEEDS OF THEIR CUSTOMERS AND RESOURCES TO FILL THOSE NEEDS.

4    A.     The growth of the Companies' load, due to Marcellus shale development, residential  
5           growth in the eastern Panhandle, and the economic growth discussed in the testimonies of  
6           both Mr. Bradley Eberts and Dr. John Deskins, are causing a need for additional  
7           generation resources. The Commission has stated that the Companies have an obligation  
8           to address capacity deficiencies in order to deal with the market risks inherent in that  
9           situation. Mon Power's acquisition of the Harrison Power Station in 2013 enabled Mon  
10          Power to maintain sufficient generating capacity through 2018, and that year is fast  
11          approaching. Mon Power identified the future capacity deficiency in 2015. In the fall of  
12          2016 the Companies undertook to develop options, to evaluate those options, to propose a  
13          solution to the shortfall, and then to seek necessary regulatory approvals.

14   Q.     HAS MON POWER ASSESSED THE POTENTIAL FINANCIAL RISKS OF  
15           RELIANCE ON MARKET PURCHASES INSTEAD OF THE ACQUISITION OF  
16           PHYSICAL GENERATING ASSETS AS A MEANS TO ADDRESS THE  
17           PROJECTED CAPACITY SHORTFALL?

18   A.     Yes. The testimony of Mr. Jay Ruberto addresses this matter. In summary, Mr. Ruberto  
19           advises that reliance on market purchases is not a reliable substitute for the ownership of,  
20           and control over, physical generating assets.

**B. The Transaction and Its Components**

Q. PLEASE DESCRIBE THE TRANSACTION GENERALLY, INCLUDING EACH COMPONENT PART.

A. Through the Transaction, Mon Power will acquire an additional 1,300 MW of installed generation capacity (expected 1,159 MW unforced capacity) in order to provide the energy and capacity needed to meet the Companies' projected requirements through 2022, minimizing or eliminating the need to rely on market purchases during that period. As Mr. Ruberto states, the Transaction will reduce market risk by providing an effective physical and financial hedge against future capacity and energy price volatility. Any extra capacity and energy can be sold by the Companies into the PJM markets and any resulting net market revenues will be credited to customers through the Expanded Net Energy Cost ("ENEC") rate mechanism.

The Transaction consists of multiple component parts:

**Pleasants Acquisition:**

- Mon Power will purchase the entire ownership interest in Pleasants from Allegheny Energy Supply Company, LLC ("AE Supply"). Mon Power will pay the bid price of \$195 million or (\$150 per kW) which is the lowest cost per kW of all bids submitted. That price stands in stark contrast to the approximate \$1.5 billion invested as plant in service at Pleasants, and to the \$733 per kW price for which Mon Power sold its 100 MW interest in Pleasants to AE Supply in 2013.

1           ○ As part of the consideration for AE Supply's ownership in Pleasants, Mon Power  
2           may assume a \$142 million promissory note ("Note") that is secured by a lien on  
3           the solid waste disposal facilities and certain other properties associated with  
4           Pleasants. If feasible and beneficial to be assumed and assigned, Mon Power  
5           will assume AE Supply's obligations under the Note and will receive a credit  
6           against the purchase price of Pleasants equal to the par value of the Note (\$142  
7           million). If not, Mon Power will pay \$195 million in cash, and AE Supply will  
8           retire the note by Closing.

9           ○ Mon Power will acquire AE Supply's construction work in progress ("CWIP"),  
10          materials, supplies, and fuel stock at Pleasants at AE Supply's actual cost as of  
11          the closing date. CWIP is included in the purchase price. AE Supply's  
12          estimated actual cost as of the estimated September 1, 2017 closing date is \$18.1  
13          million for delivered fuel and \$6.8 million for materials and supplies. These  
14          costs would be in addition to the purchase price.

15    Q.    DID MON POWER CONDUCT A FORMAL "REQUEST FOR PROPOSALS" FOR  
16          THE ACQUISITION OF EXISTING GENERATING ASSETS AND THE  
17          CONSTRUCTION OF NEW GENERATING ASSETS?

18    A.    Yes. Mon Power conducted an RFP soliciting bids, through an independent consultant,  
19          Charles River Associates ("CRA"). Company witnesses Mr. Jay Ruberto and Mr. Robert

1 Lee, of CRA, discuss those details in their testimony. Mon Power believes that the  
2 results of the RFP and CRA's analysis show that Pleasants is a cost effective asset.

3 Q. DOES PLEASANTS HAVE OTHER ATTRIBUTES THAT MAKE IT AN  
4 ATTRACTIVE ASSET TO ACQUIRE?

5 A. Yes. Mon Power knows this asset well. Mon Power was an original 25% owner when it  
6 was constructed. It owned an interest in the plant continuously until 2013 when it sold its  
7 interest at a gain to AE Supply.

8 In Case No 12-1571-E-PC, witnesses Mr. Billy Jack Gregg for the Consumer  
9 Advocate Division and Mr. Donald Walker of Staff noted that Pleasants is an excellent  
10 asset. In his direct testimony, Mr. Gregg compared Harrison and Pleasants, observing  
11 that "both plants are good plants, with Pleasants being the better of the two." Direct  
12 Testimony at Page (1). "Pleasants has superior operational characteristics and (according  
13 to the Application) is less expensive on a dollar per kW of capacity than Harrison."  
14 Direct Testimony at pages (20).

15 Mr. Walker concluded in his testimony on the Harrison/Pleasants transaction that:

- 16 • "Both the Pleasants and the Harrison Generating Stations have been well  
17 maintained and have many years of generating electricity ahead of them."  
18 • "Both Generating Stations are up to date with federal regulations and are on  
19 schedule to meet the federally mandated Mercury Air Toxics Standard  
20 (MATS) Rule."



- 1                   • “Both the Pleasants and the Harrison Generating facilities maintain reasonable
- 2                   reported heat rates which may become more consistent with the plant design
- 3                   when the proposed unit system testing becomes a reality.”
- 4                   • “Both the Pleasants and the Harrison Generating facilities maintain an
- 5                   acceptable unit available history.”...
- 6                   • “The Pleasants facility has a well-developed fuel delivery infrastructure
- 7                   including barge navigating on the Ohio River, rail service as well as over the
- 8                   road trucking.”...

9                   Direct Testimony of Donald E. Walker pages (10-11).

10                  **Temporary Surcharge:**

11    Q.       ARE THE COMPANIES PROPOSING A SURCHARGE TO RECOVER COSTS  
12              ASSOCIATED WITH THE TRANSACTION?

13    A.       Yes. The Companies request the Commission’s approval of a temporary surcharge  
14              related to the Transaction (“Temporary Surcharge”). Once the Transaction closes, Mon  
15              Power will experience a substantial increase in generation assets and will need to recover  
16              associated expenses and a return on those assets until its next base rate case has  
17              concluded and those investments are recovered in base rates. Since net market revenues  
18              will be credited by the Companies to the customers through the ENEC fuel clause, it is  
19              fair and equitable for the Companies to recover asset costs from customers through the  
20              Temporary Surcharge. Like the other components, the Temporary Surcharge is part and  
21              parcel to the Transaction. Without the Temporary Surcharge, Mon Power’s participation

1 in the Transaction will not be possible, because Mon Power simply cannot afford to  
2 operate without recovery of all costs related to the Transaction.

3 The Temporary Surcharge is described in greater detail in Mr. Valdes' testimony  
4 in this case.

5 Q. ASIDE FROM THE TEMPORARY SURCHARGE, WILL OTHER CUSTOMER  
6 RATE IMPACTS ARISE FROM THE TRANSACTION?

7 A. Yes. The Companies' customers will also experience a decrease in their ENEC rates.  
8 The net of the Temporary Surcharge with the decrease in the ENEC rate results in a  
9 projected 1.6% overall decrease in customers rates, which is approximately \$31.5 million  
10 for the 16 month period of September 1, 2017 through December 31, 2018. This amount  
11 is comprised of a Temporary Surcharge increase of \$148.6 million and an ENEC  
12 decrease of \$180 million. This equates to nearly a 1% reduction to the average  
13 residential customer's residential rate. Stated another way, an average residential  
14 customer using 1000 kWh/month will experience a decrease of almost \$1 per month or  
15 \$12 per year. Mr. Valdes discusses this topic in more detail.

16  
17 **C. Benefits and Effects of the Transaction**

18 Q. ARE THERE ADDITIONAL TRANSACTION BENEFITS FOR CUSTOMERS?

19 A. Yes. The Transaction presents an opportunity to hedge our customers' capacity and  
20 energy needs against the volatility of market prices at the lowest cost available that meets  
21 the needs of West Virginia customers. Mon Power's ability to serve its energy and

1 capacity obligations through the Transaction will greatly reduce market volatility risk,  
2 while still enabling the Companies to take advantage of low energy prices on behalf of  
3 customers when they occur.

4 In addition, the Transaction will provide the opportunity for energy sales (and for  
5 capacity sales initially) over and above those needed to provide the Companies' customer  
6 requirements. The net revenues from energy sales and/or capacity will be direct offsets  
7 to ENEC expenses, and have the potential to materially reduce customer rates. Most  
8 importantly, the Transaction enables Mon Power and its customers to have control over  
9 their energy and capacity needs well into the future. By adding a significant, reliable  
10 source of base load capacity, Mon Power will be well positioned to meet its capacity  
11 needs through at least 2022.

12 Further, the acquisition of Pleasants will enhance and solidify Mon Power's asset  
13 base in its service territory and increase its overall capitalization. A return on and return  
14 of these investments will likely be viewed favorably by rating agencies and potential debt  
15 providers. Over time, these improvements could reasonably be expected to yield more  
16 favorable financing terms, which directly benefits the Companies' customers.

17 Q. HOW WILL THE TRANSACTION BENEFIT THE STATE?

18 A. Pleasants is located within Mon Power's service territory and produces electricity from  
19 local coal from mines along the Ohio River, consuming about 3.5-4.0 million tons  
20 annually. The Transaction will provide continued support of the West Virginia coal  
21 industry, help to preserve jobs for the state's miners, help provide sufficient and

1 reliability capacity to the emerging shale gas industry, help provide tax support through  
2 the coal severance tax and other state and local taxes including corporate and individual  
3 income taxes, and benefit the overall economy. Dr. John Deskins describes this more in  
4 his testimony.

5 Additionally, the Transaction supports the commission's overall directive per the  
6 West Virginia Code 24-1-1(3) to: "Encourage the well planned development of utility  
7 resources in a manner consistent with the state needs and in ways consistent with the  
8 productive use of the state's energy resources, such as coal."

9 The Transaction also complies with the West Virginia Code 24-2-1d (c) which  
10 states: "In the interest of: Keeping utility rates of residential customers as low as possible;  
11 keeping utility rates for commercial and industrial customers competitive with those of  
12 other states; attracting new industry for which electric power costs are a major factor in  
13 location determinations; and of not placing any greater cost burden on government than is  
14 absolutely necessary for its electric power needs, each utility shall acquire, if reasonable,  
15 its projected deficient capacity from electric generation situate in West Virginia which  
16 burns coal or gas produced in West Virginia and which will provide the most reliable  
17 supply of capacity and energy at the least cost to those customers of the utility who will  
18 be served by such electric generation..."

19 Q. ARE THERE ANY ADDITIONAL BENEFITS?

20 A. Yes, Pleasants beneficially utilizes Coal Combustion Residuals. Specifically, the  
21 wallboard grade gypsum which is produced as a by-product is sold to a wallboard

1 processing facility. In fact, Pleasants is in the process of finalizing a contract that is  
2 projected to utilize 100% of all wallboard grade gypsum generated while producing  
3 several million dollars annually in revenue and avoided disposal costs.

4 Additionally, Pleasants reuses over 90% of all bottom ash generated at the site for  
5 landfill construction and approximately 10 % is sold for road conditioning. In 2016,  
6 Pleasants sold over 38,000 tons of bottom ash.

7  
8 **D. Relationship to Other Regulatory Proceedings**

9 Q. IS THE TRANSACTION RELATED TO ANY OTHER PROCEEDINGS THAT WILL  
10 BE BEFORE THE COMMISSION?

11 A. Yes, the Transaction is interrelated with several other cases. First, the Transaction will  
12 have an effect on the ENEC, by increasing the forecasted generation market sales due to  
13 the generation addition. The sales from Pleasants will result in additional net market  
14 revenues from energy and capacity sales which will be used to offset the Temporary  
15 Surcharge amount. Second, if the Transaction is approved, the impact of the proceeding  
16 upon fuel costs will be addressed in the Companies' subsequent ENEC proceedings.  
17 The projected impact on ENEC costs are more specifically addressed in Mr. Valdes'  
18 testimony. Third, assuming a contract is consummated with a winning bidder, the  
19 Companies anticipate filing a separate petition for the sale of Mon Power's share of Bath  
20 County generating station in the near term which would impact the Companies'  
21 generation resources and expected capacity needs. While the sale of Bath affects the

1 total capacity deficiency, the Companies believe that the Transaction, on the terms and  
2 conditions noted, is prudent whether or not a Bath sale is consummated.

3  
4 **E. Affiliate Agreement; Other Regulatory Approvals**

5 Q. WILL THE TRANSACTION REQUIRE A CONTRACT BETWEEN EITHER OF THE  
6 COMPANIES AND THEIR AFFILIATES?

7 A. Yes. The Companies seek approval of two affiliate arrangements for the Transaction. As  
8 part of the Transaction, the Commission should approve in principle the Asset Purchase  
9 Agreement between Mon Power and AE Supply, without specifically approving the  
10 explicit terms and conditions thereof. Also, to the extent that Mon Power will be  
11 assigned the Note, the Commission should approve the Assignment and Assumption  
12 Agreement between Mon Power and AE Supply.

13 Q. WILL THE COMPANIES OR AE SUPPLY REQUIRE ANY REGULATORY  
14 APPROVALS OTHER THAN THE COMMISSION APPROVAL SOUGHT IN THE  
15 PETITION?

16 A. Yes. The Transaction also requires the approval of the Federal Energy Regulatory  
17 Commission ("FERC"). Specifically, the Pleasants transfer of interconnection facilities  
18 and market based rate authority requires approval of the FERC under Section 203 of the  
19 Federal Power Act.

1 Q. FINALLY, HOW WILL THE PLEASANTS PLANT BE OPERATED?

2 A. The Pleasants plant will be operated by Mon Power and the employees at the plant will  
3 become Mon Power employees. Maintaining the skilled and knowledgeable workforce  
4 will enable seamless operation of the plant through the transition to Mon Power  
5 ownership.

6  
7 **F. Summary of Requested Relief**

8 Q. PLEASE SUMMARIZE THE COMPANIES' REQUEST.

9 A. The Petition demonstrates that the terms of the Transaction are reasonable, do not give  
10 any party an undue advantage over any other, and are in the public interest. The  
11 Transaction protects the Companies' customers against the risks of substantial market  
12 exposure and rate instability that would result if Mon Power's dependence upon market  
13 purchases of capacity and energy increases as projected. Further, the Transaction is  
14 clearly the most beneficial, as it is the lowest cost alternative that satisfies the needs of  
15 the West Virginia customers *and* provides a full hedge against market reliance until  
16 2022. The Transaction will aid the West Virginia state and local economies and provides  
17 Mon Power an asset located in its PJM APS zone as well as in its service territory. It is a  
18 well-known asset, a high performer, and lacks the uncertainty and risks of a development  
19 project.

20 In addition, the Transaction will be reviewed by FERC and must meet FERC's  
21 stringent guidelines for reasonableness and for affiliate transactions. For these reasons,

1           the Commission should approve the Transaction and all of its component parts, including  
2           the Pleasants acquisition, the Affiliate Agreements, the Temporary Surcharge, and the  
3           reduction in ENEC rates described in Mr. Valdes' direct testimony. The Companies are  
4           requesting an order no later than August 21, 2017 so that the transaction can be closed by  
5           September 1, 2017.

6    Q.     DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

7    A.     Yes, it does.



PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

Case No. 17-\_\_\_\_-E-\_\_\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of a Generation Resource  
Transaction and Related Relief

PUBLIC, REDACTED  
VERSION

DIRECT TESTIMONY OF  
JAY A. RUBERTO

March 7, 2017

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Jay A. Ruberto. My business address is 5001 NASA Boulevard, Fairmont,  
3 West Virginia.

4 Q. WHAT IS YOUR POSITION?

5 A. I am the Director, Regulated Generation and Dispatch, for FirstEnergy Service Company.  
6 In this position, I am responsible for the regulated generation portfolio for the utility  
7 subsidiaries of FirstEnergy Corp. ("FirstEnergy"), including Monongahela Power  
8 Company ("Mon Power"). Among other duties, I am responsible for asset management,  
9 strategic optimization, and the dispatch of the regulated generation assets of Mon Power.  
10 This includes reviewing Mon Power's major generation expenditures, its fuel  
11 procurement, its capital projects, and its supply of generation to The Potomac Edison  
12 Company ("PE," and with Mon Power, the "Companies").

13 Q. PLEASE DESCRIBE YOUR EDUCATION BACKGROUND AND  
14 QUALIFICATIONS.

15 A. I graduated from The Pennsylvania State University in 1983 with a Bachelor of Science  
16 degree in Electrical Engineering. From 1984 to 2006, I held several positions with  
17 Allegheny Energy, Inc. ("Allegheny"), including Director, Customer Service; General  
18 Manager, Customer Service Center ("CSC"); Team Leader, CSC Support; Supervisor,  
19 Division Customer Services and Accounting; and various engineering positions.  
20 Between 2006 and 2011, I was Director, Transmission Siting, for Allegheny Energy  
21 Service Corporation, where I was responsible for directing the activities associated with

1 the siting of transmission lines, real estate and rights of way, drafting documents and  
2 records, and permitting and surveying for Allegheny's subsidiary operating companies.  
3 Following the merger of Allegheny and FirstEnergy in 2011 and before taking my current  
4 position, I was Senior Advisor, Transmission and Substation Engineering, responsible for  
5 siting large transmission projects regulated by the Federal Energy Regulatory  
6 Commission ("FERC") throughout FirstEnergy's service territory.

7 Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

8 A. I am testifying on behalf of the Companies. Mon Power provides all of the generation  
9 supply for the West Virginia portion of PE, which comprises approximately 140,000  
10 customers.

11 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

12 A. First, I will describe Mon Power and the process by which Mon Power determined that it  
13 would need to acquire additional resources to meet its future energy and capacity  
14 obligations. Second, I will describe Mon Power's efforts to satisfy its projected need for  
15 capacity, including: (a) why Mon Power determined that the capacity resources needed to  
16 have certain characteristics (*e.g.*, dispatchability and location in PJM's APS zone),  
17 (b) why certain forms of capacity resources (*e.g.*, power purchase agreements ("PPAs"))  
18 were not sought, and (c) why Mon Power chose to engage an independent third-party,  
19 Charles Rivers Associates ("CRA"), to work with Mon Power to design and then  
20 independently administer a transparent, fair and non-discriminatory request for proposal  
21 process to procure capacity and demand response resources ("Capacity RFP"). Third, I

1 will describe the evaluation criteria in the Capacity RFP, including how the price  
2 criterion was applied by CRA, and the rationale for the inclusion of each non-price  
3 evaluation criterion in the Capacity RFP, and I will show how the criteria were designed  
4 to solicit a proposal that meets the capacity needs of Mon Power and provides the optimal  
5 combination of value, risk, and reliability for the Companies and its customers. Lastly, I  
6 will describe the proposal by Allegheny Energy Supply Company, LLC (“AE Supply”)  
7 to sell the Pleasants Facility to Mon Power.

8  
9 **I. MON POWER’S NEED FOR ADDITIONAL RESOURCES**

10 Q. EXPLAIN HOW MON POWER DETERMINED THAT IT WOULD NEED  
11 ADDITIONAL RESOURCES TO MEET ITS PROJECTED ENERGY AND  
12 CAPACITY NEEDS.

13 A. As part of my duties, I regularly evaluate Mon Power’s load forecasts and its generation  
14 resources to determine whether sufficient generating capacity is available to meet  
15 projected customer load. Pursuant to W.Va. Code §24-2-19(a) and General Order No.  
16 184.35 of the Public Service Commission of West Virginia (“Commission”)<sup>1</sup>, in 2015  
17 Mon Power established a process for undertaking an annual review of its and PE’s  
18 capacity and energy needs, and reflected that process formally in the 2015 Integrated  
19 Resource Plan (“IRP” or the “Plan”) that was filed on December 30, 2015 with the

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<sup>1</sup> General Order No. 184.35, Order Requiring Electric Utilities To File Integrated Resource Plans (W. Va. P.S.C. Mar. 19, 2015).

1 Commission .<sup>2</sup> The IRP compared Mon Power's and PE's projected peak demand with  
2 Mon Power's current and planned capacity resources. As Mon Power explained in the  
3 IRP:

4 *Objective.* Mon Power's objective in developing the Plan was to identify  
5 the resources necessary to meet [Mon Power's and PE's] future energy and  
6 capacity obligations in a cost effective, prudent, and reliable manner. Mon  
7 Power's options for meeting these future needs consist of supply-side and  
8 demand-side resources and market purchases.<sup>3</sup>

9 The Commission accepted the IRP on June 3, 2016.<sup>4</sup>

10 Q. WHAT WERE THE CONCLUSIONS REACHED IN THE IRP?

11 A. Mon Power determined in the IRP that it would have a capacity shortfall beginning in the  
12 winter peaking period of 2016, that was projected to exceed 700 MW by 2020 and extend  
13 to more than 850 MW by 2027. It found that Mon Power needed significant amounts of  
14 capacity resources to meet its forecasted demand.

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<sup>2</sup> Monongahela Power Company and The Potomac Edison Company, 2015 Integrated Resource Plan, Case No. 15-2002 (filed Dec. 30, 2015). Because, as noted above, Mon Power provides electric service in PE's West Virginia service territory, Mon Power's load and supply forecasts and requirements included PE's West Virginia load.

<sup>3</sup> *Id.* at 4.

<sup>4</sup> Monongahela Power Company and The Potomac Edison Company, Case No. 15-2002-E-IRP (W. Va. P.S.C. June 3, 2016)

1 Q. WHY WAS THE WINTER PEAK USED TO IDENTIFY THE CAPACITY  
2 SHORTFALL?

3 A. Mon Power identified its capacity requirements throughout the year, and determined that  
4 its peak occurs during the winter months.

5 Q. WERE THERE ANY CHANGES TO MON POWER'S LOAD AND GENERATION  
6 FORECAST AFTER IT ISSUED THE IRP?

7 A. Yes. Subsequent to the IRP's issuance, and before issuance of the Capacity RFP on  
8 December 16, 2016, Mon Power continued to evaluate its generation portfolio based on  
9 recent rule changes in the PJM markets, particularly the recently-implemented PJM  
10 "Capacity Performance" market design. Under PJM's Capacity Performance market  
11 design, which was approved by the FERC in June 2015, generator resources with a  
12 capacity obligation that fail to perform when needed to maintain reliability during peak  
13 demand periods are subject to significant penalties.<sup>5</sup> PJM began implementing the  
14 Capacity Performance market design in PJM's Reliability Pricing Model ("RPM")  
15 auctions conducted in August 2015 for the 2018-2019 Delivery Year. The Capacity  
16 Performance market design will be fully implemented after the May 2017 RPM auction  
17 for the 2020-2021 Delivery Year.

18

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<sup>5</sup> *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208 (2015), *order on reh'g*, 155 FERC ¶ 61,157 (2016).

1 Q. HOW DID THE CAPACITY PERFORMANCE MARKET DESIGN IMPACT MON  
2 POWER'S PROJECTED CAPACITY NEED?

3 A. Mon Power determined that the Capacity Performance market design would have a  
4 significant impact on the value of Mon Power's indirect interest in the Bath County  
5 Pumped Storage Project (the "Bath County Project") located in Warm Springs, Virginia.  
6 Mon Power's interest in the Bath County Project represents 487 MW of capacity. Mon  
7 Power concluded that this capacity value would be reduced by approximately 50%  
8 beginning in the 2020-2021 PJM Delivery Year due to certain availability requirements  
9 imposed on Capacity Performance resources related to system emergencies.<sup>6</sup>

10 Q. IN ADDITION TO THE CAPACITY REDUCTION DESCRIBED ABOVE, DID THE  
11 LOCATION OF THE BATH COUNTY PROJECT IMPACT MON POWER'S  
12 ANALYSIS OF ITS PROJECTED CAPACITY NEED?

13 A. Yes. The Bath County Project is located in the PJM Dominion zone, and cannot be  
14 readily used under PJM's Capacity Performance rules to replace any Mon Power unit in  
15 the PJM APS zone during critical hours nor could the other Mon Power units be used as  
16 replacement capacity for Bath.<sup>7</sup> All of Mon Power's 3,700 MW of generation capacity,  
17 except for Bath, is located in PJM's APS zone. Mon Power's retail load, as well as the  
18 retail load of PE, is primarily located within PJM's APS zone. Consequently, Mon  
19 Power determined that it may be in the best interest of both Mon Power and PE and their

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<sup>6</sup> See PJM Manual, Section 5.4.1.

<sup>7</sup> *Id.* at Section 8.9.

1           respective customers to seek to sell Mon Power's interest in the Bath County Project, and  
2           to seek to acquire additional capacity resources in PJM's APS zone.

3   Q.   HOW DID MON POWER'S DECISION TO EXPLORE SELLING ITS INTEREST IN  
4       THE BATH COUNTY PROJECT AND UPDATES TO THE LOAD AND ENERGY  
5       FORECASTS IMPACT THE ANALYSIS OF MON POWER'S PROJECTED  
6       CAPACITY NEED?

7   A.   As a result of PJM's Capacity Performance market design, Mon Power's related decision  
8       to explore selling its indirect interest in the Bath County Project and the projected higher  
9       load based on increased economic development, Mon Power updated its load and  
10      capacity forecast from the IRP and revised its projected capacity shortfall to  
11      approximately 1,005 MW by the 2020/2021 delivery year and 1,439 MW by 2027/2028  
12      delivery year. If Bath was retained by Mon Power, the capacity shortfall would be  
13      reduced by about 220 MW, which represents the capacity available based on the new  
14      Capacity Performance requirements that begin in the 2020/2021 delivery year.  
15      Regardless, Mon Power would still move forward with the Pleasants transaction. Both  
16      the load and capacity forecasts are issued at least annually, and Mr. Eberts' testimony  
17      contains the latest forecast for the Companies' West Virginia territory.



1           **II.     MEETING THE NEED FOR ADDITIONAL CAPACITY RESOURCES**

2    Q.    WHY DID MON POWER DECIDE TO MEET ITS PROJECTED NEED FOR  
3           ADDITIONAL RESOURCES THROUGH AN ACQUISITION?

4    A.    Mon Power’s decision to pursue an acquisition of capacity resources was based on the  
5           IRP, which concluded that “[t]he lowest [cost] evaluated option to address Mon Power’s  
6           needs appears to be the purchase of existing generating facilities. This option would  
7           require an agreement between Mon Power and any seller at a price that allows this option  
8           to remain the best solution.”<sup>8</sup> As a result, Mon Power decided to seek to acquire one or  
9           more dispatchable generating resources, and potentially up to 100 MW of demand  
10          resources (“DR”), within PJM’s APS zone to meets its projected capacity needs.

11   Q.    WHY DID MON POWER DECIDE TO SEEK TO ACQUIRE CAPACITY  
12          RESOURCES THAT ARE DISPATCHABLE?

13   A.    The PJM Capacity Performance market design includes significant penalties to encourage  
14          performance by capacity resources during critical reliability events. The failure to deliver  
15          energy during such events – referred to as “Performance Assessment Hours” – can result  
16          in penalties, and those could amount to more than a resource’s yearly capacity revenue.  
17          Moreover, there are no meaningful exceptions that would excuse a capacity resource  
18          from such penalties. Therefore, it is critical that Mon Power have the operational  
19          flexibility to dispatch its capacity resources to meet these stringent Capacity Performance  
20          requirements. Accordingly, Mon Power decided to acquire fully-dispatchable capacity

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<sup>8</sup>        IRP at 57.

1 resources with reliable, year-round fuel supply availability and/or other operational  
2 characteristics to enhance reliability and availability.

3 Q. WHY WERE RENEWABLE RESOURCES SUCH AS WIND AND SOLAR NOT  
4 CONSIDERED IN THE RFP?

5 A. Mon Power evaluated the acquisition of renewable resources but ultimately concluded  
6 not to acquire such resources in the RFP. For the reasons I describe above, non-  
7 dispatchable resources, such as wind and solar facilities, are considered intermittent in  
8 that there is no assurance that these facilities will be available to supply energy and  
9 capacity during all Performance Assessment Hours and, hence, these facilities represent  
10 operational risk and exposure for Mon Power in meeting its capacity needs under PJM's  
11 stringent Capacity Performance market design. Therefore, Mon Power elected not to  
12 acquire renewable resources in the RFP.

13 Q. ARE THERE OTHER REASONS WHY WIND AND SOLAR RESOURCES ARE  
14 INADEQUATE TO SATISFY MON POWER'S CAPACITY NEEDS?

15 A. Yes. Wind and solar resources have low capacity factor attribution in the PJM region.<sup>9</sup>  
16 Effective January 1, 2017, PJM capacity factors for wind and solar are 13% and 38%  
17 respectively. Accordingly, Mon Power would need to acquire 5,000 MW to 10,000 MW  
18 of wind and solar to satisfy the 1,400 MW projected capacity need for 2027, thereby  
19 significantly increasing its overall capacity acquisition costs.

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<sup>9</sup> PJM Interconnection, Class Average Capacity Factors for Wind and Solar Capacity Resources Effective January 1, 2017, *available at* <http://www.pjm.com/~media/planning/res-adeq/wind-and-solar-class-average-capacity-factors.ashx>.

1 Q. WHY DID MON POWER DETERMINE THAT THE GENERATING RESOURCES  
2 WOULD HAVE TO BE LOCATED IN THE APS ZONE?

3 A. As noted above, capacity resources subject to the Capacity Performance market design in  
4 PJM are subject to significant penalties if they are unable to operate during critical hours  
5 on the system. To minimize this penalty risk, the PJM rules allow a capacity resource  
6 owner to “net” performance across multiple units, provided those units are located in the  
7 same PJM load zone.<sup>10</sup> Mon Power’s existing capacity resources representing 3,700 MW  
8 of capacity are primarily located in the PJM APS zone, and would be exclusively located  
9 in the PJM APS zone if the Bath sale is consummated, which incorporates parts of West  
10 Virginia, Pennsylvania, Maryland, and Virginia. For this reason, Mon Power determined  
11 that, to minimize overall Capacity Performance penalty risk, it must acquire capacity  
12 resources in the APS zone.

13 Q. DID MON POWER EVALUATE WHETHER GENERATING RESOURCES THAT  
14 WERE STILL UNDER DEVELOPMENT WOULD MEET ITS CAPACITY NEEDS?

15 A. Yes. Mon Power decided that it would consider projects that are still under development,  
16 provided that those projects satisfied certain development milestones (e.g., acquisition of  
17 construction permits to demonstrate that they would be available in the 2020/2021  
18 Delivery Year, which corresponds to Mon Power’s needs for capacity). Projects meeting  
19 certain development milestones represent comparatively lower project completion risk  
20 than do projects in the conceptual or early planning phase.

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<sup>10</sup> PJM Manual 18, Section 8.9.

1 Q. DID MON POWER CONSIDER WHETHER IT COULD MEET ITS CAPACITY  
2 NEEDS BY PURCHASING POWER FROM A WHOLESALE SELLER RATHER  
3 THAN BY PURCHASING GENERATING RESOURCES?

4 A. Yes. Mon Power evaluated the potential for purchasing capacity through a power  
5 purchase agreement (“PPA”), but determined that it would be preferable to acquire one or  
6 more capacity resources, including generation facilities and DR resources.

7 Q. WHY IS THE PURCHASE OF PHYSICAL GENERATING RESOURCES  
8 PREFERABLE TO THE PURCHASE OF POWER UNDER A PPA?

9 A. There are many reasons why owning a physical asset is preferable to purchasing power  
10 under a PPA. First, the IRP concluded that “the lowest evaluated option to address Mon  
11 Power’s needs appears to be the purchase of existing generating facilities.”<sup>11</sup> Second,  
12 owning an asset provides greater control over operations, maintenance, fuel procurement,  
13 and capital improvements. Third, in some cases, a plant owner can modify facility  
14 operations to better suit market conditions and derive greater economic value from the  
15 facility. By contrast, with a PPA arrangement, Mon Power would have little or no  
16 control over making efficiency improvements, changing fuels, or other steps to enhance  
17 the source facility’s performance. In fact, Mon Power did receive two non-conforming  
18 bids submitted as PPA agreements in response to the RFP with some of these very  
19 concerns present. For example, the bidders have stringent requirements, such as pricing  
20 set to require operating at a minimum 85% capacity factor and automatic cost escalations.

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<sup>11</sup> IRP at 57.

1           These arrangements are not only a more costly way of procuring capacity and energy but  
2           also greatly limit flexibility to profitably manage sales into the PJM market.

3   Q.    DID MON POWER CONCLUDE THAT IT COULD ONLY MEET ITS FUTURE  
4           CAPACITY OBLIGATIONS THROUGH THE ACQUISITION OF ADDITIONAL  
5           GENERATING CAPACITY?

6   A.    No. As noted above, Mon Power also determined that it would seek up to 100 MW of its  
7           capacity needs through DR resources, either by purchasing such resources from  
8           aggregators or directly from large end-users. Despite including a DR component in the  
9           Capacity RFP, however, Mon Power did not receive any DR bids.

10  Q.    HOW DID MON POWER CONCLUDE THAT 100 MW WOULD BE THE  
11          APPROPRIATE AMOUNT OF DR RESOURCES TO SEEK IN THE RFP?

12  A.    Mon Power worked with CRA to identify DR resources in the APS zone that have  
13          participated in prior PJM RPM auctions. The target, 100 MW, was at the higher end of  
14          what Mon Power believed it could procure from the market based on Mon Power's and  
15          CRA's identification of DR resources in the APS zone.

16  Q.    PLEASE DESCRIBE CRA AND HOW THEY WERE SELECTED TO MANAGE THE  
17          RFP PROCESS.

18  A.    Mon Power retained an independent third party, CRA, to design and administer a  
19          transparent, fair and non-discriminatory RFP process, including the solicitation of bids  
20          for available capacity resources. Prior to choosing CRA, Mon Power evaluated four  
21          separate, independent entities with experience in developing and administering RFPs for

1 electric generation resources. CRA was chosen based on its vast and demonstrated  
2 experience, resources, judgment, and abilities.

3 Q. PLEASE DESCRIBE THE CAPACITY RFP.

4 A. In order to manage its capacity needs and ensure an adequate level of generation supply  
5 for its customers, Mon Power issued the Capacity RFP seeking to acquire: (i) one or  
6 more generating facilities (existing, new or sufficiently in development) amounting to  
7 approximately 1,300 MW of capacity; and (ii) up to 100 MW of DR resources. I will  
8 describe certain components of the RFP – in particular, the non-price evaluation criteria –  
9 and explain why they were included in the RFP. Robert J. Lee, a Vice President at CRA,  
10 is providing testimony in this proceeding regarding CRA's work with Mon Power to  
11 develop the RFP, and CRA's fair and non-discriminatory implementation of the RFP,  
12 including CRA's communications with bidders and its evaluation of bids.

13 Q. PLEASE DESCRIBE THE RFP TIMETABLES THAT WERE DEVELOPED.

14 A. CRA has extensive experience in conducting RFPs for generation. The RFP was issued  
15 on December 16, 2016 with proposals due February 3, 2017. Mon Power relied greatly  
16 on CRA's proposed schedule for bid submittals, questions from bidders, qualifications,  
17 and credit. CRA informed Mon Power that the process ran smoothly and they did not  
18 receive complaints from either potential or actual bidders. CRA reported that no bidder  
19 asked for additional time to submit bids.

1 Q. WHAT EFFORTS DID CRA MAKE TO ENHANCE AWARENESS OF THE  
2 CAPACITY RFP AND FACILITATE THE PRE-QUALIFICATION OF  
3 RESPONDENTS?

4 A. In addition to Mon Power's press release and information website for the Capacity RFP,  
5 CRA conducted active outreach to potential bidders in the APS zone, both inside and  
6 outside of West Virginia. It identified, in advance, 20 existing generation assets and  
7 eight projects under development, and contacted them directly to inform them of the  
8 Capacity RFP and the relevant timeframes under it. It also identified and contacted six  
9 DR providers.

10  
11 **III. THE EVALUATION CRITERIA**

12 Q. PLEASE DESCRIBE THE OBJECTIVES CONSIDERED BY MON POWER IN  
13 DESIGNING THE EVALUATION CRITERIA REFLECTED IN THE RFP.

14 A. Mon Power and CRA designed an RFP with price and non-price evaluation criteria that  
15 were crafted to yield capacity resource proposals exhibiting the optimal combination of  
16 value, risk and reliability for the Companies, their customers and the State of West  
17 Virginia. These evaluation criteria were applied in a balanced, level and objective  
18 manner by CRA while protecting the identity of bidder participants, as described more  
19 completely in the testimony of Mr. Robert J. Lee.

1 Q. PLEASE DESCRIBE THE PRICE CRITERION AND HOW IT WAS APPLIED.

2 A. In order to protect Mon Power's and PE's West Virginia retail customers, Mon Power  
3 and CRA designed an RFP that designated price as the most important evaluation  
4 criterion. As part of this evaluation, Mon Power obtained an energy and capacity forecast  
5 from ABB Inc., as described in the testimony of Mr. Thomas Sweet, to provide an  
6 independent source for data necessary for modeling of generation resources. This data  
7 was used by CRA for portions of their analysis. In applying the price criterion, CRA  
8 calculated a net present value of expected customer impact for each proposal, using data  
9 regarding energy and capacity markets, fuel prices, and plant performance metrics, to  
10 model each proposed generation resource's expected dispatch and cost, thereby  
11 permitting CRA to evaluate proposals on a balanced and objective basis.

12 Q. PLEASE DESCRIBE THE NON-PRICE EVALUATION CRITERIA REFLECTED IN  
13 THE CAPACITY RFP.

14 A. Mon Power and CRA selected the following non-price criteria for use in the evaluation of  
15 proposals submitted in response to the Capacity RFP:

- 16 1. in-state location and fuel use;
- 17 2. fuel risk;
- 18 3. development risk;
- 19 4. ease of integration; and
- 20 5. specific risk factor(s).



1 Q. PLEASE DESCRIBE THE RATIONALE FOR INCLUDING THE “IN-STATE  
2 LOCATION AND FUEL USE” CRITERION.

3 A. West Virginia law requires the Commission to consider and promote the use of in-state  
4 fuel and generation benefits in its decisions.<sup>12</sup> To advance these legislative objectives  
5 and provide economic benefits where the Companies’ customers live, the RFP evaluation  
6 process considered the expected use of any West Virginia fuels (*e.g.*, coal and natural  
7 gas), labor, taxes, and other in-state resources for the development, construction and  
8 operation of the generation facility. Bidders were also requested to describe and provide  
9 support for any expected economic benefits to the local community, region, and State of  
10 West Virginia, associated with the development, construction, and/or operation of the  
11 generation facility.

12 Q. PLEASE DESCRIBE THE RATIONALE FOR INCLUDING THE “FUEL RISK”  
13 CRITERION.

14 A. It is critical that a capacity resource perform reliably and be able to comply with the  
15 stringent operating requirements under PJM’s Capacity Performance market rules. As a  
16 result, the evaluation criteria considered a resource’s demonstrated fuel availability  
17 throughout the operating year, the reliability of its primary fuel transportation, and  
18 whether it had a secondary delivery route and/or on-site storage in the event of temporary  
19 disruptions to the primary fuel transportation source.

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<sup>12</sup> See W. Va. Code §§ 24-1-1(a)(3), 24-2-1d(a) and (c), and 24-2-1g(a)-(b).

1 Q. PLEASE DESCRIBE THE RATIONALE FOR INCLUDING THE “DEVELOPMENT  
2 RISK” CRITERION.

3 A. This criterion was established in connection with the consideration of facilities that are  
4 still in development. Because Mon Power will commit to performance in the PJM  
5 capacity market based on the operating characteristics of the acquired capacity resource,  
6 the evaluation criteria considered the risks associated with the development of proposed  
7 capacity resources (including significant upgrades to existing facilities) and related  
8 contractual commitments, including such matters as budgeting, permitting and regulatory  
9 approvals.

10 Q. PLEASE DESCRIBE THE RATIONALE FOR THE “EASE OF INTEGRATION”  
11 CRITERION.

12 A. Any challenge to integrating a capacity resource into Mon Power’s corporate and  
13 operational framework can add to operational cost and delay, and can adversely impact  
14 system reliability. As a result, the evaluation criteria considered how easily a facility  
15 resource could be integrated into Mon Power’s existing systems and corporate  
16 framework. For example, the criteria included consideration of the following issues: (i)  
17 manufacture and vendor warranty transferability; (ii) fuel and fuel transportation contract  
18 flexibility and transferability; (iii) employee integration (union and non-union); (iv)  
19 assumption or ability to replace existing contracts (*e.g.*, long-term service agreements,  
20 maintenance, etc.); (v) compatibility of control systems; and (vi) integration or  
21 cancellation of supply chain and other vendor agreements.

1 Q. PLEASE DESCRIBE THE RATIONALE FOR THE “SPECIFIC RISK” CRITERION.

2 A. Generation facilities, whether existing or in development, may have unique risk factors,  
3 including those related to permitting and operations. For example, a facility may be  
4 confronting a proceeding for re-licensing that could be protracted, thereby adding to  
5 operational uncertainty. Another facility could have an operational history of multiple  
6 transfers of ownership, thereby indicating that operational and maintenance practices may  
7 have been compromised. In order to protect Mon Power’s customers and enhance the  
8 value of the acquired facility, bidders were required to provide a description of any such  
9 specific risks and, as important, the bidder’s proposal for mitigating any such risk.

10 Q. WHAT CRITERIA WERE DEVELOPED TO EVALUATE DR RESOURCES?

11 A. CRA specified that to qualify as a “DR Supplier” under this segment of the Capacity  
12 RFP, a resource must meet the notification and performance requirements applicable to  
13 an “Emergency Curtailment Event” – a situation in which Mon Power or PJM determines  
14 that an emergency situation exists that may jeopardize the integrity of the distribution or  
15 transmission system. Qualifying resources would also be subject to emergency  
16 curtailment testing in years where an actual curtailment event has not occurred. Contract  
17 price was the primary evaluation consideration for DR resources that otherwise met the  
18 qualifications for consideration in the Capacity RFP.

19 Q. DID CRA EVALUATE ANY BIDS FOR DEMAND RESOURCES?

20 A. No. While several parties expressed interest in DR, none offered bids.

21

1           **IV.    THE RESULTS OF THE RFPs**

2    Q.    WHO DID CRA SELECT AS THE WINNING BIDDER FOR THE GENERATION  
3           ACQUISITION RFP?

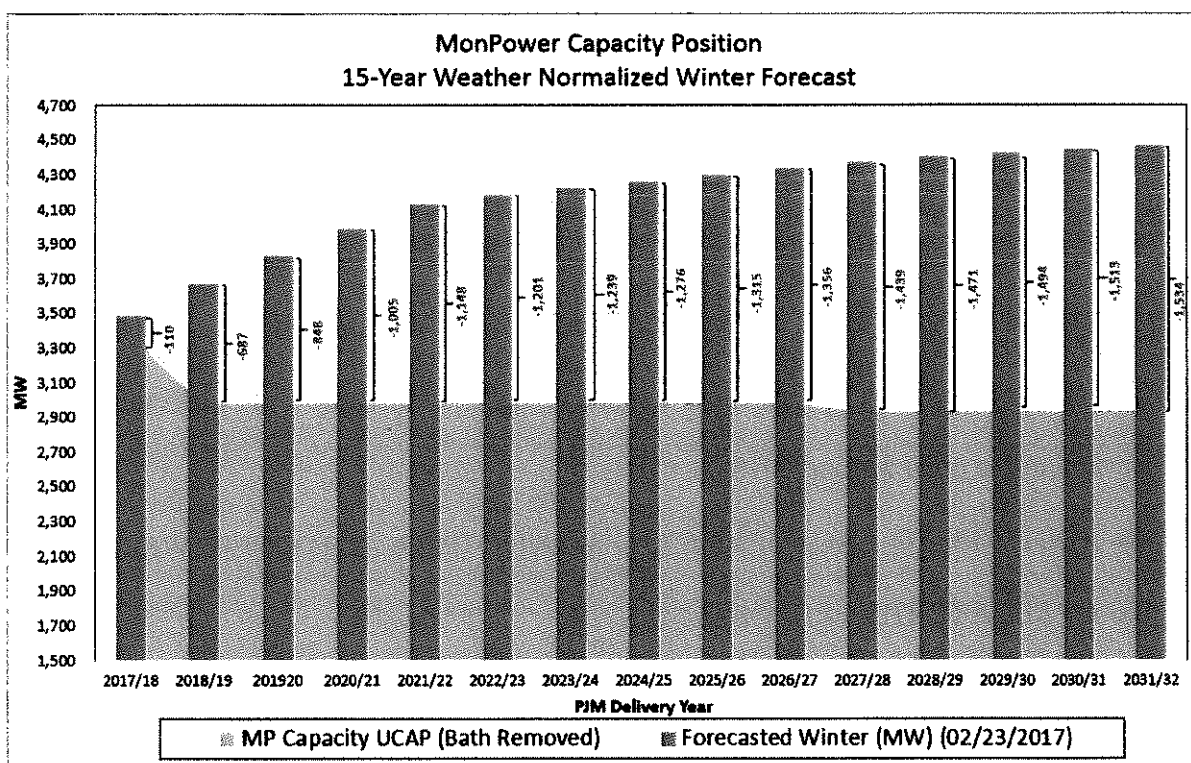
4    A.    CRA selected AE Supply’s proposal to sell the Pleasants Facility to Mon Power for a  
5           purchase price of \$195 million, far below the \$1.6 billion <sup>13</sup>necessary to procure a similar  
6           amount of capacity from the other bidders.  Additionally, the winning bidder scored  
7           highest on the non-price factors.  The approximate 1,159 MW unforced capacity  
8           (“UCAP”) facility consists of two coal fired units that are equipped with state-of-the-art  
9           SO<sub>2</sub>-removing scrubbers, NO<sub>x</sub>-reducing selective catalytic reactors and a sodium-  
10          bisulfate injection system.  The by-product produced by the scrubbing system is  
11          converted to wallboard-quality gypsum.

12   Q.    DID THE WINNING BID OFFER THE 1,400 MW SOUGHT IN THE RFP?

13   A.    No.  While the Capacity RFP requested up to 100 MW of Demand Response and 1,300  
14          MW of UCAP generation resources, only 1,159 MW was awarded for a generation  
15          resource.  The additional capacity from just the winning bidder is projected to meet the  
16          Companies’ needs through the 2021/ 2022 as shown on the following:

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<sup>13</sup>       [Begin Confidential \*\*\*\*\*  
\*\*\*\*\*End Confidential].



Q. IS IT REASONABLE TO ACQUIRE ONLY A PORTION OF THE PLEASANTS PLANT NOW TO SATISFY THE SHORT TERM NEED AND ACQUIRE THE BALANCE OF THE PLANT LATER?

A. This would not be reasonable for many reasons. First, the capacity shortfall in the 2018/2019 delivery year already exceeds the capacity provided by a single Pleasants unit. This would trigger an immediate need to proceed with the acquisition of the balance of the facility. Second, since the PJM Base Residual Auction is held three years in advance of the delivery year, it is advantageous to own sufficient generation in advance of the auction to secure capacity revenues for the delivery year where the shortfall would otherwise exist. Third, Mon Power does not wish to own part of a plant in conjunction

1 with another owner (affiliate or otherwise) as it prefers to have the sole decision authority  
2 on dispatch strategy, operations and maintenance as well as capital expenditures. Fourth,  
3 the acquisition of the entire Pleasants plant is projected to produce a net present value of  
4 \$636 million over 15 years with an associated rate benefit to customers. Fifth, AE  
5 Supply did not offer a part of the plant. And finally, AE Supply has indicated they are  
6 exiting the generation business and has no plans to continue to own and maintain any  
7 portion of the plant beyond 2018.

8 Q. IN ADDITION TO ENGAGING CRA, WHAT OTHER ACTIVITIES WERE DONE  
9 TO EVALUATE THE PROPOSAL?

10 A. I put into place several operations. First, we engaged Black & Veatch to provide an  
11 engineering evaluation of the facility or facilities emerging from the Capacity RFP,  
12 including reviewing the technical information submitted by the bidder. Black & Veatch's  
13 onsite review was conducted on February 20, 2017, and that review is described in the  
14 testimony of Mr. Kurt Leutheuser. Additionally, we reviewed the report written by CRA  
15 and reviewed all individual bids submitted.

16 Q. HOW DID CRA DOCUMENT ITS RECOMMENDATION?

17 A. On February 27, 2017, CRA provided Mon Power with an Opinion Letter. Mr. Lee will  
18 describe the Opinion Letter in his testimony.

19 Q. PLEASE EXPLAIN YOUR REVIEW OF THE GENERATION ACQUISITION BIDS.

20 A. I have reviewed all of the conforming bids to evaluate whether I agree with the  
21 conclusions reached by CRA. My review showed the winning bidder did indeed have a

1 much lower purchase price (1/8<sup>th</sup> the amount to secure 1,300 MW with the other two  
2 bidders combined), the most favorable position on non-price factors, an ability to use  
3 low-priced and readily-available West Virginia-sourced fuel, and operational  
4 characteristics typical of similar type plants. Additionally, the winning bidder complies  
5 with all existing environmental regulations and PJM's Capacity Performance guidelines.  
6 The remaining bidders' costs per MW were substantially higher.

7 Q. PLEASE EXPLAIN YOUR REVIEW OF THE ENGINEERING EVALUATION  
8 PERFORMED BY BLACK & VEATCH.

9 A. I had discussions with Black & Veatch representatives before and after their site visit,  
10 and also reviewed their report. Additionally, I directed an engineer in my unit to  
11 participate in these reviews and attend the site visit. My review of their results confirmed  
12 that the plant is well maintained and in satisfactory condition, including major  
13 components such as boilers and electrical components. Pleasants has an excellent record  
14 in both safety and operational performance, and is well-positioned for years of productive  
15 service.

16 Pleasants is a thoroughly modernized facility. It has a number of significant  
17 improvements and, as I mentioned above, a host of important environmental control  
18 investments needed to continue cost-effective operations under existing and anticipated  
19 environmental regulations. These environmental controls achieve MATS compliance  
20 primarily through modifications to existing equipment, eliminating the need for full-scale  
21 environmental control investments that some other coal-fired facilities face.

1           While the potential for certain capital expenses starting around 2023 related to  
2           Effluent Limit Guidelines and Coal Combustion Residual regulations were identified,  
3           there is uncertainty as to whether these expenses will occur, the extent they may be  
4           incurred, and their actual timing. However, even if these potential costs were assumed to  
5           ultimately be required, the Pleasants facility would still provide a significantly higher net  
6           present value than the other bidders.

7   Q.    WAS MON POWER OBLIGATED TO PURSUE A TRANSACTION WITH THE  
8           WINNING PROPOSAL IN THE CAPACITY RFP?

9   A.    No, it was not. No matter what the results of the Capacity RFP, Mon Power was free to  
10       accept or reject any bid. However, Mon Power has concluded that at the price offered,  
11       acquisition of Pleasants is cost-effective from the perspective of the Companies'  
12       customers as described in the testimony of Mr. Raymond Valdes. I agreed with the  
13       conclusions reached by CRA, and verified the plant's condition with an independent  
14       engineering review, and have sought and obtained management approval to award the bid  
15       subject to regulatory approval by the Commission and FERC.

16   Q.    DO YOU BELIEVE THAT THE CAPACITY RFP WAS A COMPETITIVE PROCESS  
17       PRODUCING SIGNIFICANT AND MEANINGFUL BIDS IN TERMS OF  
18       PARTICIPATION AND VALUE TO SECURE NEW GENERATION?

19   A.    Yes. The process was competitive and produced three qualifying proposals for additional  
20       generating capacity. This process will enable Mon Power to secure new generation  
21       capacity at a low cost.



1 Q. HOW DOES THE PRICE PER KW FOR PLEASANTS COMPARE TO THE MARKET  
2 FOR GENERATION CAPACITY?

3 A. The purchase price for Pleasants is just \$150/kW, far below the \$733/kW price AE  
4 Supply paid in 2013 when it acquired Mon Power's interest in the plant. Additionally,  
5 this price represents a significant discount to the [Confidential \* \* \* \* \*]<sup>14</sup> price  
6 offered by the sponsors of the other two compliant bids. This results in a significant  
7 savings with a purchase price of just \$195 million for Pleasants compared to \$1.6 billion  
8 for a similar amount of capacity from the other bidders. And the fact that there is a high  
9 net present value for Pleasants supports the value and cost savings of buying this asset  
10 instead of procuring power from the market.

11 Q. IN COMPARING THE RESULTS OF THE CAPACITY RFP GENERATION  
12 ACQUISITION TO PURCHASING ENERGY AND CAPACITY ESSENTIALLY ON  
13 THE SPOT PJM MARKET, WHAT IS YOUR RECOMMENDATION?

14 A. The Companies should purchase the dispatchable, physical generation assets which will  
15 provide a market revenue stream to help pay the expenses of energy and capacity for  
16 customers. Having physical assets is a hedge against price volatility and increasing costs.  
17 This is because market prices, which can vary significantly hour to hour and year to year,  
18 are far less stable than the cost to generate. Additionally, the market price for energy and  
19 capacity prices are expected to increase in the coming years, which allows an asset owner  
20 to take advantage of these higher market revenues. Further, the economic analysis shows

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<sup>14</sup> [Begin Confidential \* \* \* \* \*]  
\* \* \* \* \* [End Confidential]

1       that, taking into account the price and the expected operating costs of the compliant  
2       capacity bids, purchasing physical assets is a lower cost approach for our customers than  
3       buying from the market. Specifically, CRA calculated an NPV for the Pleasants facility  
4       of \$636M, which effectively represents its value above market purchases. Not only is it a  
5       lower cost to purchase hard assets, but it lowers the risk of market volatility. And as for  
6       the non-conforming bids, while a bid price per kw cannot be calculated with those  
7       planned assets since they were not offered for sale but rather just their power offered for a  
8       limited period of time the net present value for each of the non-conforming bids was  
9       significantly lower than the net present value for Pleasants.

10  
11       **V. SUMMARY**

12   Q.   PLEASE SUMMARIZE WHAT YOU ARE REQUESTING FROM THE  
13       COMMISSION.

14   A.   Mon Power asks the Commission to approve the purchase of the Pleasants generation  
15       facility, which is estimated to produce a positive net present value of over \$600M over  
16       the next 15 years. Additionally, the bid for Pleasants was far lower than the other bids  
17       and scored the highest on non-price factors as evaluated by CRA.

18  
19       **VI. CONCLUSION**

20   Q.   DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

21   A.   Yes it does.

PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

Case No. 17-\_\_\_\_-E-\_\_\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of a Generation Resource  
Transaction and Related Relief

DIRECT TESTIMONY OF  
ROBERT J. LEE

March 7, 2017

1 Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

2 A. My name is Robert J. Lee. I am a Vice President in the Auctions and Competitive  
3 Bidding Practice at Charles River Associates (“CRA”). Founded in 1965, CRA provides  
4 economic and financial expertise and management consulting services to businesses, law  
5 firms, accounting firms, and governments. My business address is 200 Clarendon Street,  
6 T-9, Boston, Massachusetts 02116.

7 Q. WHAT ARE YOUR QUALIFICATIONS AND EXPERIENCE?

8 A. As a Vice President in CRA’s Auctions and Competitive Biddings division, I help clients  
9 design and administer transactions in regulated and unregulated industries, including the  
10 power sector. Since 2006, my focus has been on the design and implementation of  
11 competitive sales and procurement processes. The process frameworks can range from  
12 requests for proposals (“RFPs”) to formal auctions. In structuring these transactions, I  
13 oversee and manage the process as an Independent Monitor/RFP Manager. Prior to  
14 joining CRA in 2001, my work focused on the domestic energy sector, particularly the  
15 power sector, and I continue to do a wide range of consulting work in that area. Prior to  
16 entering consulting in 1996, I earned a Master of Science in Industrial Administration  
17 from Carnegie Mellon University in Pittsburgh.

18 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

19 A. I am testifying on behalf of Monongahela Power Company (“Mon Power”) in support of  
20 its request for authorization from the Public Service Commission of West Virginia to  
21 acquire the Pleasants Power Station, located in Willow Island, West Virginia (the

1           “Facility”) from Allegheny Energy Supply LLC (the “Proposed Transaction”). The  
2           purpose of my testimony is as follows: First, I will describe my role and CRA’s role in  
3           the RFP process that led to the Proposed Transaction. Second, I will describe how the  
4           RFP was created and designed. Third, I will describe how the RFP process was fair and  
5           competitive and met the Federal Energy Regulatory Commission’s (FERC”) enunciated  
6           “Allegheny Principles” for a fair transaction without affiliate preference.

7   Q.   DOES CRA HAVE EXPERIENCE IN STRUCTURING AND ADMINISTERING  
8           SIMILAR RFPs?

9   A.   Yes. CRA has served as an independent RFP manager to promote fair, open, and non-  
10          discriminatory RFP processes for other structured sales and procurement engagements in  
11          the electric power sector. During my tenure in CRA’s Auctions and Competitive Bidding  
12          practice, CRA has independently monitored and administered over 35 competitive  
13          procurements on behalf of electric utilities and hundreds for our clients across all  
14          industries.

15   Q.   PLEASE DESCRIBE YOUR ROLE IN THE RFP PROCESS THAT LED TO THE  
16          PROPOSED TRANSACTION?

17   A.   CRA served as RFP advisor and manager through all stages of the RFP process,  
18          including the design, administration, evaluation and conclusion stages.

1           **I. THE RFP DESIGN STAGE**

2       Q.     PLEASE EXPLAIN HOW THE RFP WAS CREATED AND DESIGNED?

3       A.     The RFP was initiated in response to Mon Power's need for baseload power as outlined  
4             in the Mon Power's December 30, 2015 Integrated Resource Plan. CRA worked with  
5             Mon Power to define the RFP's objectives and scope based on the Mon Power's need for  
6             baseload power. The qualification requirements were clear and consistent with the Mon  
7             Power's stated needs and the evaluation criteria were clear and consistent with West  
8             Virginia customer interests.

9       Q.     PLEASE DESCRIBE THE STEPS INVOLVED IN THE DESIGN STAGE OF THE  
10            RFP PROCESS.

11      A.     The RFP design stage involved CRA working with Mon Power on the steps that led to  
12            the issuance of an RFP:

13            a) *Defined Objectives and Requirements*: CRA worked with Mon Power to define  
14            the RFP process objectives and requirements. Mon Power's objective was to  
15            ensure an adequate and reliable capacity supply for its customers. Together, CRA  
16            and Mon Power determined that customer needs would be best served through the  
17            acquisition of up to 1,300 MW of dispatchable, physical capacity resources that  
18            met established industry-wide reliability and performance criteria for electric  
19            generation facilities combined with up to 100 MW of demand response ("DR")  
20            resources. We concluded that potential facilities could be physically located

1           inside and outside of Mon Power's service territory, but should be located inside  
2           the Allegheny Power System ("APS") zone in the PJM region;

3           b) *Prepared RFP Documentation*: CRA worked with Mon Power to prepare the RFP  
4           document, the data requirements and a proposal input template, the Asset  
5           Purchase Agreement, Notice of Intent, Non-Disclosure Agreement, and Pre-  
6           Qualification Application, as well as an RFP Timetable with deadlines and  
7           requirements for participation in the RFP (together, the "RFP Documents");

8           c) *Developed the Evaluation Criteria*: CRA worked with Mon Power to develop the  
9           evaluation criteria which included a Net Present Value of revenue requirements  
10          model along with certain other scoring criteria; and

11          d) *Identified Potentially Interested Parties*: CRA identified resources that met Mon  
12          Power's stated needs so that those resources could be contacted or given notice of  
13          the RFP publication.

14   Q.   DO YOU BELIEVE MON POWER'S DESIRE TO ACQUIRE HARD ASSETS FOR  
15          GENERATION INSTEAD OF A POWER PURCHASE AGREEMENT IS  
16          REASONABLE?

17   A.   Yes. Mon Power has conveyed its desire to procure physical capacity resources through  
18          this RFP process rather than purchasing power through a contractual arrangement in  
19          order to maximize its flexibility in managing its capacity resources and to minimize  
20          against market risk and volatility. CRA believes this desire is reasonable and is not  
21          inconsistent with a competitive procurement process given the benefits and flexibility

1           that ownership and physical control over a capacity resource provides that a PPA cannot  
2           provide. Specifically, with a physical capacity resource, Mon Power will have full  
3           control over the operation and maintenance of the facility and may have options to  
4           optimize maintenance and fuel purchases across the utility's portfolio of assets.

5    Q.    THERE WAS A REQUIREMENT THAT THE GENERATION ASSET BE LOCATED  
6           WITHIN PJM'S APS ZONE AND THAT THE DR RESOURCE BE LOCATED  
7           WITHIN THE COMPANY'S SERVICE TERRITORY. DO YOU AGREE WITH  
8           THOSE REQUIREMENTS?

9    A.    Yes. The in-zone preferences are consistent with Mon Power's needs and will enhance  
10          Mon Power's ability to comply with capacity market rules and to optimize the operation  
11          of its portfolio of generation facilities. In addition, the RFP did allow for generation  
12          assets to be located outside the APS Zone if there were insufficient bids received in-zone,  
13          but we believe that a sufficient number of APS zone bids were received. DR was limited  
14          to the Company's service territory to ensure that the DR acquired in response to this RFP  
15          was incremental DR beyond what is available and/or in use in other parts of PJM. The  
16          in-service territory requirement recognizes that a lot of DR already participates in the  
17          existing PJM programs in other states. The Company wanted to ensure that DR bid in  
18          this RFP did not cannibalize DR available for other state programs. As a result, there was  
19          a desire to accept wholesale DR bids from West Virginia customers in the Mon Power  
20          service territory.



1 Q. DO YOU BELIEVE THE TIMELINE CREATED FOR THE BIDDER RESPONSES  
2 WAS REASONABLE?

3 A. Yes. The timeline was reasonable. The RFP was issued on December 16, 2016. The  
4 pre-Qualification deadline was 1 week later on December 23, 2016. Proposals were due  
5 on February 3, 2017. CRA identified potential capacity resources and DR providers that  
6 may have had an interest in submitting a bid and conducted active outreach to those  
7 parties. CRA received pre-qualification applications from 11 entities including 3 existing  
8 generating facilities, 6 planned facilities and 2 DR providers. No party, pre-qualified or  
9 not, expressed any concern about the data requirements. One party expressed concerns  
10 about the timeline but these concerns were the result of that party's obligations not  
11 related to this transaction that we were unable to accommodate.

12  
13 **II. THE RFP ADMINISTRATION STAGE**

14 Q. PLEASE DESCRIBE THE ADMINISTRATION STAGE OF THE RFP PROCESS.

15 A. Once the RFP was designed and the RFP Documents were prepared (which I will discuss  
16 later), the process moved to the administration stage, which involved publication of the  
17 RFP and all communication with potential bidders. CRA handled all aspects of RFP  
18 administration including the following steps:

- 19 a) RFP Information Publication: CRA was the sole developer and manager of the  
20 website (<http://monpower-rfp.com>) that published the RFP and all RFP-related  
21 information, including the RFP Documents, for access by any interested party;

- 1           b) RFP "Help Line" Administrator: CRA fielded all RFP related questions from  
2           potential bidders through the CRA controlled email address (MonPower-  
3           RFPManager@crai.com) and the website listed above. CRA compiled and  
4           scrubbed all questions of identifying information before forwarding to Mon  
5           Power. CRA worked with Mon Power to draft each response, which CRA  
6           reviewed and posted, together with the question and date, and sent each response  
7           to the website for all bidders to consider;
- 8           c) Bidder Outreach: For those resources CRA identified as potentially interested  
9           participants in the design stage, CRA notified their representatives that the RFP  
10          had been issued and directed them to the RFP website for more information; and
- 11          d) Bidder Pre-Qualification Screening: CRA reviewed and screened all submissions  
12          to ensure they conformed to the defined pre-qualification and content  
13          requirements available on the RFP website.
- 14

15       **III. THE RFP EVALUATION STAGE**

16   Q.     PLEASE DESCRIBE THE EVALUATION STAGE OF THE RFP PROCESS.

17   A.     After CRA received bid proposals from pre-qualified bidders, the RFP process moved to  
18     the evaluation stage. There, CRA applied the RFP's pre-determined evaluation criteria in  
19     a consistent and objective manner. CRA used the energy forecast from ABB, as  
20     explained further in the testimony of Thomas Sweet of ABB, as an input in order to run  
21     the CRA dispatch model and to calculate a net present value. Both price and non-price

1 criteria were considered in the bid evaluation and were applied to the conforming bids  
2 received, and CRA conducted a blind-evaluation and scored the bids using the  
3 predetermined scoring criteria. To a lesser extent, CRA evaluated the economics of the  
4 non-conforming bids<sup>1</sup> as well.

5 Q. ARE THE CRITERIA THAT WERE USED TO EVALUATE THE BIDS  
6 APPROPRIATE AND REASONABLE?

7 A. Yes. In addition to being designed to meet the Allegheny Principles, the evaluation  
8 criteria were developed to consider both customer costs and the broader overall impact of  
9 the transaction on the West Virginia economy. The net present value of revenue  
10 requirements was given the most weight in the evaluation process, and the Proposed  
11 Transaction (namely, the acquisition of the Pleasants facility) had the lowest revenue  
12 requirement of all conforming and non-conforming bids received. The valuation criteria  
13 also considered broader economic considerations for West Virginia, including local fuel  
14 sourcing and tax contributions. Pleasants scored highest on the non-price factors.

---

<sup>1</sup> CRA received 2 non-conforming bids in the form of power purchase/tolling arrangements. These proposals did not include full and complete proposed PPA language and could not be completely evaluated beyond the indicative economics certain price considerations included with the proposals.

1       **IV.   THE RFP CONCLUSION STAGE**

2       Q.     PLEASE DESCRIBE THE CONCLUSION STAGE OF THE RFP PROCESS.

3       A.     At the conclusion of the RFP process, CRA issued an Opinion Letter to notify Mon  
4             Power of the outcome of the RFP and the bid evaluations. I provide the Opinion Letter,  
5             which is attached to my testimony at Exhibit RJL-1.

6       Q.     WHAT WAS THE OVERALL CONCLUSION IN THE OPINION LETTER?

7       A.     The Opinion Letter concluded that, based on CRA's analysis of the bids, the winner of  
8             the RFP was Pleasants Power Station, located in Willow Island, West Virginia, and  
9             owned by Allegheny Energy Supply Company LLC. The Opinion Letter also states that  
10            all stages of the RFP process were consistent with a fair and competitive RFP, the  
11            Allegheny Principles (which I define below), the application of which ensured that no  
12            affiliate of Mon Power was given an undue advantage or preference in the RFP. No DR  
13            bids were received.

14      Q.     YOU STATED THAT THE SECOND PURPOSE OF YOUR TESTIMONY WAS TO  
15             CONFIRM THAT THE RFP SATISFIED THE ALLEGHENY PRINCIPLES  
16             ESTABLISHED BY THE FERC. WHAT ARE THOSE PRINCIPLES?

17      A.     In a 2004 order, FERC described the four principles it would use to evaluate an RFP  
18             process and determine whether an affiliate received undue advantage or preference. *See*  
19             *Allegheny Energy Supply Co., LLC*, 108 FERC ¶61,082 at P 22 (2004). The four  
20             principles for conducting a fair affiliate transaction are: transparency, definition,  
21             evaluation and oversight (collectively, the "Allegheny Principles"). As noted, the RFP

1 process and its outcome comported with the Allegheny Principles, and my testimony  
2 below will explain how the RFP process satisfied each Allegheny Principle.

3 Q. DO YOU HAVE ANY EXPERIENCE APPLYING THE ALLEGHENY PRINCIPLES  
4 TO A COMPETITIVE SOLICITATION PROCESS?

5 A. Yes, I have managed numerous competitive solicitation processes in both FERC and state  
6 jurisdictional matters, including an asset acquisition, open season processes for allocating  
7 transmission capacity, and state “provider of last resort” wholesale power procurement  
8 auctions. These competitive solicitation processes generally are designed and  
9 implemented to comply or be consistent with the Commission’s *Edgar/Allegheny/Ameren*  
10 requirements (*i.e.*, transparency, product definition, evaluation and oversight). Speaking  
11 to generation procurement, in 2015 I worked with DTE Electric Company to develop and  
12 administer a RFP for capacity. FERC issued an order finding that the DTE RFP was  
13 consistent with the Commission’s guidance on cross-subsidization and found no affiliate  
14 preference.<sup>[1]</sup>

15 Q. PLEASE DESCRIBE THE ALLEGHENY PRINCIPLE OF TRANSPARENCY.

16 A. The Allegheny Principle of Transparency requires an RFP to be open and fair. In a  
17 transparent RFP, all parties should receive all RFP related information at the same time.  
18 No party – particularly an affiliate – should ever have an informational advantage. In  
19 addition, to satisfy this principle, the RFP should also be designed to encourage  
20 participation from any interested party.

---

<sup>[1]</sup> *DTE Electric Company, et al.*, 152 FERC ¶ 61,036 (2015).

1 Q. DID THE RFP PROCESS THAT LED TO THE PROPOSED TRANSACTION MEET  
2 THE TRANSPARENCY PRINCIPLE?

3 A. Yes, the Proposed Transaction was the result of a fair and open RFP process. CRA  
4 worked with Mon Power to design the RFP to ensure meaningful participation by all  
5 interested parties and eliminate characteristics that might improperly give an advantage  
6 or preference to an affiliate. The following characteristics and actions illustrate how the  
7 RFP adhered to the Transparency Principle:

8 a) Independent Evaluator as Point of Contact: Bidders were instructed to avoid  
9 direct contact with Mon Power and CRA and to submit all RFP related questions  
10 through the CRA controlled RFP website or RFP email address;

11 b) Equal Access to Information: All RFP Documents and RFP related information  
12 were available only on the RFP website (<http://monpower-rfp.com/>) which was  
13 developed and administered solely by CRA;

14 c) Non-Discriminatory Pre-Qualification Requirements: All bidders were required  
15 to submit pre-qualification documents to determine their fitness to participate in  
16 the process. Specifically, the pre-qualification requirements were focused on  
17 ensuring that potential bidders owned the generation facility they intended to  
18 offer, and to establish credit and financial information. CRA designed the pre-  
19 qualification documents in a standardized manner to minimize the burden for  
20 potential bidders. CRA approved all parties that submitted pre-qualification  
21 documents to submit a Proposal; and

1           d) Open and Inclusive Procedure: Mon Power issued a press release the same day it  
2           issued the RFP and directed all interested parties to the RFP website in order to  
3           view the pre-qualification information requirements.<sup>2</sup> Additionally, bid fee and  
4           collateral requirements were kept to a minimum.

5   Q.     PLEASE DESCRIBE THE ALLEGHENY PRINCIPLE OF DEFINITION.

6   A.     The Allegheny Principle of Definition requires a clear and nondiscriminatory description  
7           of the desired product or products. Consistency with this principle requires an RFP to  
8           state all relevant aspects of the product or products sought.

9   Q.     DID THE RFP PROCESS THAT LED TO THE PROPOSED TRANSACTION MEET  
10          THE ALLEGHENY PRINCIPLE OF DEFINITION?

11   A.     Yes, the RFP process met the Allegheny Principle of Definition. CRA worked with Mon  
12          Power to define precisely the RFP product requirements, which included specifics  
13          regarding capacity, desired plant technology, service territory, facility location and  
14          transmission requirements. Mon Power sought to procure ownership of a planned or  
15          existing dispatchable generation facility or facilities, located within the APS zone of the  
16          PJM region, and amounting to approximately 1,300 MW of capacity, combined with up  
17          to 100 MW of DR resources.

---

<sup>2</sup>       Mon Power Issues Requests for Proposals to Secure Generation Capacity for West Virginia Service Area and Solicits Bids for Sale of its Ownership Stake in Bath County Pumped Storage Project (Dec. 16, 2016), *available at* [https://www.firstenergycorp.com/newsroom/news\\_releases/mon-power-issues-request-for-proposals-to-secure-generation-capacity.html](https://www.firstenergycorp.com/newsroom/news_releases/mon-power-issues-request-for-proposals-to-secure-generation-capacity.html).

1 Q. WHAT IS THE ALLEGHENY PRINCIPLE OF EVALUATION?

2 A. The Allegheny Principle of Evaluation concerns bid assessment and requires an RFP to  
3 inform potential bidders of the price and non-price criteria that will be used to evaluate  
4 their bid, and to evaluate all bids in using the same, pre-determined criteria outlined in  
5 the RFP. The relative importance of each price and non-price criteria item must also be  
6 made clear.

7 Q. DID THE PROCESS THAT LED TO THE PROPOSED TRANSACTION MEET THE  
8 ALLEGHENY PRINCIPLE OF EVALUATION?

9 A. Yes, the process was consistent with the Allegheny Principle of Evaluation. The RFP  
10 contained several pages of bid pre-qualification requirements. Please see Section 4.1 of  
11 the RFP Document attached as Exhibit RJL-2. In addition, the RFP extensively  
12 described the price and non-price criteria by which all pre-qualified bids would be  
13 evaluated, as well as their relative importance. (See RFP Section 4.2). CRA evaluated  
14 the bids using an excel-based, levelized-cost tool, which was designed to facilitate an  
15 objective evaluation framework that could be applied equally to all bids. At no point did  
16 CRA deviate from the pre-defined evaluation criteria, and bidder confidentiality was  
17 maintained at all times.

18 Q. WHAT IS THE ALLEGHENY PRINCIPLE OF OVERSIGHT?

19 A. The Allegheny Principle of Oversight concerns the role of an independent third party, in  
20 essence, a party whose decision making cannot be influenced by the RFP issuer, its  
21 affiliates, or any potential bidder. Under the Allegheny Principle of Oversight, such a



1           third-party should meet minimum standards. It should have no financial interest in any of  
2           the potential bidders, including the affiliate, or in the outcome of the process. The  
3           independent third party should neither own nor operate facilities that participate in the  
4           market affected by the RFP. Lastly, the independent third party should be able to  
5           determine whether an RFP process is transparent and fair, and that an RFP issuer's  
6           decision was free from the influence of any affiliate relationships.

7    Q.    DID THE RFP PROCESS THAT LED TO THE PROPOSED TRANSACTION MEET  
8           THE ALLEGHENY PRINCIPLE OF OVERSIGHT?

9    A.    Yes. The process that led to the Proposed Transaction met the Allegheny Principle of  
10          Oversight. CRA is an independent consulting firm with no financial interest in Mon  
11          Power, its affiliates, or any of the bidders. CRA neither owns nor operates any facilities  
12          operating in the relevant market (namely, PJM), nor can CRA indirectly benefit from the  
13          Proposed Transaction. As the RFP Manager, I had a full overview of all details of the  
14          entire RFP process. All information between potential bidders and Mon Power went  
15          through CRA.

1           V.    CONCLUSION

2   Q.    DO YOU BELIEVE THE RFP WAS FAIR AND COMPETITIVE, AND WITHOUT  
3       PREFERENCE FOR MON POWER'S AFFILIATE, AND SHOULD BE ACCEPTED  
4       AS SUCH BY THIS COMMISSION?

5   A.    Yes.

6   Q.    DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

7   A.    Yes, it does, at this time.



DELIVERED VIA EMAIL

CRA No. D23038-00

February 27, 2017

Jay Ruberto  
Director, Regulated Generation & Dispatch  
FirstEnergy Service Company  
5001 NASA Boulevard  
Fairmont, WV 26554  
(304) 534-7472

**Re: Monongahela Power Company's Request for Proposals - Power Supply Generation Facilities and/or Demand Response**

Dear Mr. Ruberto:

In the fourth quarter of 2016, Monongahela Power ("Mon Power") retained CRA International d/b/a Charles River Associates, Inc. ("CRA") to assist in the design, administration and bid evaluation of a Request for Proposals ("RFP") process. The RFP was used to solicit bids for the acquisition to cover an identified capacity shortfall of approximately 1,045 MW by 2020 that rises to 1,400 MW by 2027. Through the RFP, Mon Power sought to satisfy this capacity shortfall through a combination of an approximately 1,300 MW (UCAP) of generation capacity and up to 100 MW of demand resources. CRA served as an independent third party managing the RFP process ("RFP Manager").

The RFP was issued on December 16, 2016, with a Notice of Intent, Non-disclosure Agreement and Pre-Qualification Application due on December 23, 2016. Written, binding bid proposals ("Proposals") were due on February 3, 2017. Two forms of proposals were accepted:

1. The sale of a facility or facilities satisfying the requirements described in the RFP
2. Demand Response (DR) offers for up to 100 MW

CRA reviewed all Proposals that met pre-determined qualifying criteria set forth in the RFP documentation and evaluated each based on certain pre-specified evaluation criteria. For asset proposals, the evaluation considered:

1. Estimated NPV of expected market revenues and costs over the 2018 to 2032 period
2. Fuel sourcing and consumption from West Virginia

3. Tax or PILOT payments within the state of West Virginia
4. Fuel supply security
5. Commercial operation date risk for projects currently in development
6. Integration risk
7. Other potential project specific risk factors

Up to 100 MW of DR could be awarded to qualifying proposals. DR proposals that met certain qualification requirements would be rank ordered based on cost and the lowest 100 MW could be selected as winning proposals.

Mon Power was not directly involved in the evaluation of Proposals nor was Mon Power aware of bidder identities as part of the RFP FAQ process. During the evaluation, Mon Power was only made generally aware of the progress and/or any issues encountered during the review. Because of Mon Power's limited involvement, CRA is issuing this Opinion Letter to provide a final review of the RFP and its execution and to confirm that the RFP was performed in a transparent, fair and nondiscriminatory manner and no Mon Power affiliate was given an undue advantage or preference in the RFP.

CRA is an economics and management consulting firm, founded in 1964, and headquartered in Boston, Massachusetts. CRA has worked on behalf of a wide range of stakeholders in the design, management and execution of structured sales and procurement processes executed both through formal auctions and RFPs. CRA clients in these engagements have included regulated utilities, government agencies, state and federal regulators as well as cooperatives and private corporations. CRA has directly managed or monitored structured processes that have resulted in over \$25 billion worth of transactions in both the United States and abroad. CRA has extensive experience in managing default service procurement processes for utilities in the Midwest and mid-Atlantic United States and currently manages the default service procurement processes for FirstEnergy's Ohio Utilities, FirstEnergy's Pennsylvania Utilities, Duke Energy Ohio, Duquesne Light Company and The Dayton Power & Light Company. CRA advises energy sector clients on asset valuation for the purposes of acquisition and divestiture and senior members of CRA's team have testified as experts on sales and procurement process design before regulatory agencies and in civil litigation.

## OVERVIEW OF THE RFP PROCESS

Prior to issuing the RFP on December 16, 2016, CRA worked with the Mon Power team to define the process objectives and requirements. Mon Power advised CRA that in order to ensure reliable, adequate

capacity supplies to meet customer needs, Mon Power desired to acquire dispatchable, physical resources that, at a minimum, would meet established industry-wide reliability and performance criteria for electric generation facilities. Through this RFP, Mon Power solicited Proposals for the purchase and sale of existing electric generating assets or assets in development that were physically located within APS's service territory within PJM. CRA worked with Mon Power to prepare the RFP documentation and ensure the product requested was clearly defined and the evaluation criteria clearly specified in the RFP documentation, which was available to all interested parties via the RFP Information Website.

CRA managed the outreach to potential bidders interested in the process. CRA identified 20 existing assets and 8 in-development projects located within APS service territory that met Mon Power's stated needs. Representatives from each of these facilities plus 6 demand resource providers were contacted via electronic mail notices and phone calls, informing them of the RFP and relevant due dates. CRA maintained a public Information Website that included all key documents related to the RFP process. Through that Information Website, interested parties could submit questions and comments related to the process, the documents or the RFP requirements. In addition, FirstEnergy published a press release related to this RFP on its website on December 16, 2016. All interested parties were allowed to submit Proposals in the RFP.

Under the RFP, Mon Power affiliates were invited to submit Proposals on the same basis and under the same conditions as unaffiliated bidders. CRA and Mon Power agreed to a number of process safeguards that ensured all Proposals would be reviewed on a fair and equitable basis regardless of their affiliate status. These safeguards are further described below with respect to CRA's role in the Mon Power RFP.

Ultimately, CRA approved all pre-qualification applications submitted and notified the applicants. Regarding bids, CRA received three conforming bids for generation facilities, two non-conforming bids for power purchase agreements, and no bids for Demand Resources. After the Proposal deadline, CRA evaluated the economics and other scoring considerations related to each Proposals independently from Mon Power or its affiliates. CRA reserved the right, in its sole and exclusive discretion, to reject any and all Proposals on the grounds that such Proposal did not conform to the terms and conditions of the RFP or on the grounds that the bidder did not comply with provisions of the RFP.

After the Proposals were received, CRA as the RFP Manager:

1. Reviewed all Proposals and screened the responses to ensure they conformed with all response requirements;

2. Conducted follow up conference calls with representatives of each company submitting a conforming Proposal to talk through issues with the information provided.
3. Evaluated all conforming Proposals according to the pre-specified criteria as outlined in Sections 4.2 and 5.5 of the RFP document;
4. Managed bidder communication and outreach; and
5. Confirmed the winning Proposal.

## ROLE OF CRA

CRA was retained by Mon Power to design, manage and oversee the RFP process. As the independent RFP Manager, CRA drew from prior experience in other structured sales and procurement engagements to ensure that the Mon Power RFP would promote a fair, open, and non-discriminatory process. CRA also took into account the guidelines set forth by the Federal Energy Regulatory Commission ("FERC" or "Commission") for evaluating whether an RFP satisfies the underlying principle that no affiliate should receive undue preference during any stage of the RFP.<sup>1</sup> The FERC guidelines are as follows:

1. **Transparency**: the competitive solicitation process should be open and fair;
2. **Definition**: the product or products sought through the solicitation should be precisely defined;
3. **Evaluation**: standardized evaluation criteria applied equally to all bids and bidders; and
4. **Oversight**: an independent third-party should design the solicitation, administer bidding, and evaluate bids prior to the company's selection.

CRA considered these four guidelines during the design, administration, and evaluation of Mon Power's RFP as discussed below. For the reasons described herein, the RFP was performed in a transparent, fair and nondiscriminatory manner and no Mon Power affiliate was given an undue advantage or preference in the RFP.

### *Transparency*

The underlying transparency principle is that the competitive solicitation should be open and fair. In the design and implementation of the RFP, many decisions were made to encourage participation and ensure that affiliate Proposals were not given any undue advantage. Specific ways in which this RFP was open and fair include the following design characteristics:

1. **Equal Access to Information**: All parties had equal access to information related to the RFP via the RFP Information Website and all interested parties were allowed to submit Proposals. The RFP Information website ([www.monpower-rfp.com](http://www.monpower-rfp.com)) was developed and maintained by CRA, and included the RFP and all of its Appendices, forms, and other materials. The RFP and related forms were made available to all potential bidders at the same time via the website and CRA's outreach. Parties were informed of how to contact the RFP Manager and had the option to submit inquiries by email or through

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<sup>1</sup> *Allegheny Energy Supply Co. LLC*, 108 FERC ¶ 61,082 (2004) (*Allegheny*).

a form on the Information Website. All communications about the RFP with interested parties occurred through CRA and the RFP Information Website. Inquiries received throughout the duration of the RFP were addressed via an FAQ process framework that allowed for a timely review and dispatch of any inquiry received while maintaining the confidentiality of the party that submitted any inquiry. For questions that required Mon Power's assistance, the questions were sent through the RFP Manager, who first removed any and all information that could be used to identify the questioner, and only then passed the data request to Mon Power. All questions and answers either were posted on the Website for all parties to review (without identifying the inquirer) or were answered via email if the information was already available on the Information Website, in the RFP documents, or not related to all bidders.

2. **Low Barriers to Entry:** CRA knows of no barriers to responding to the RFP. All potential bidders submitting pre-qualification documents were accepted as pre-qualified bidders. CRA created standardized response templates to reduce the level of effort associated with generating an RFP response and the information requested from respondents was consistent with standard industry practice. No other potential bidders expressed any concern about the requirements or process related to submitting a proposal.
3. **Non-discriminatory Pre-Qualification Requirements:** All bidders were required to provide the same information and make the same certifications in the Pre-Qualification Application and in the Non-Disclosure Agreement ("NDA"). The pre-qualification information requirements were minimal, focused on asset ownership and credit information.
4. **Non-discriminatory Credit Requirements:** Although all bidders were required to submit credit ratings and financial information as part of the Pre-Qualification Application, there were no minimum credit requirements for submitting a Proposal.
5. **Non-discriminatory review of Asset Purchase Terms and Conditions:** The RFP contained a proposed form of Asset Purchase Agreement ("APA"). Bidders were allowed to submit a "mark-up" of the APA containing any comments proposed for consideration as part of a bidder's Proposal. Any proposed redline changes were to be received by CRA, redacted for any identifying information, and sent to Mon Power for consideration so that any rejections or approvals were made on a non-discriminatory basis.
6. **Independent Evaluation:** The RFP Manager determined which bidders satisfied the qualification requirements, evaluated the economics of each Proposal using a consistent set of assumptions and determined which Proposals were winning Proposals under the process described in Sections 4.2 and 5.5 of the RFP.



These efforts promoted an open, transparent, and non-discriminatory process for all bidders.

### *Definition*

The second criteria under the FERC guidelines is that the product sought through the RFP should be precisely defined in a manner that is clear and non-discriminatory, including the specifications of the desired capacity, fuel type, plant technology, and transmission requirements. In Mon Power's RFP, the product was clearly defined in Section 1.2 of the RFP Document:

"Through this RFP Mon Power seeks to satisfy this capacity shortfall through a combination of an approximately 1,300 MW (UCAP) of generation capacity and up to 100 MW of demand resources."

"In order to manage its capacity needs and ensure an adequate level of reliable generation supply for its customers, Mon Power issued this RFP to:

1. acquire a generation facility or facilities that, at a minimum, meet established industry-wide reliability and performance criteria, or certain developmental requirements for new or planned electric generation facilities
2. acquire demand resources to satisfy a portion of the identified future capacity needs."

Further details regarding the requested products were provided in Sections 4 and 5 of the RFP. In addition to clearly defined product terms, the RFP process and the evaluation considerations were clearly documented and made available to all interested parties in the RFP document; Bidders had full knowledge of the desired products, the process through which they could submit Proposals and criteria by which Proposals would be evaluated. Bidders had the ability to ask clarifying questions if needed through the FAQ process on the RFP Information Website, and any such questions were responded to.

### *Evaluation*

The third Commission guideline is that the evaluation criteria should be standardized and applied to all bidders equally. The RFP should also clearly specify the price and non-price criteria and the relative importance of each criterion under which Proposals will be evaluated in the decision making process.

1. Interested parties were pre-qualified as Bidders before they could submit Proposals, reducing the need to evaluate Proposals based on those non-price factors.

2. The pre-qualification criteria were established in advance of the RFP release and such standards were made available to all interested parties via the Mon Power RFP Information Website.
3. The Evaluation Criteria were included in the RFP document and were made available to all interested parties on the RFP Information Website.
4. The actual evaluation of Proposals received was performed consistent with the standards and process defined in advance of issuing the RFP on December 16, 2016. There were no instances or issues that required CRA to deviate from the pre-defined evaluation criteria and bidder confidentiality was maintained at all times throughout the evaluation process. In two separate instances a bidder submitted non-conforming bids for long-term Power Purchase Agreements, and both were disqualified.
5. Proposals were evaluated by CRA through the use of an excel-based tool. The design of this tool was intended to facilitate an objective evaluation framework that could be applied equally across all Proposals received, consistent with the Evaluation Criteria.

### ***Oversight***

The Commission suggests that the RFP process be overseen by an independent third party. The independent third party should oversee the design, administration, evaluation of the process, and make a determination that the RFP process is transparent, fair, and not influenced by any affiliate relationships.

1. The RFP process was monitored for openness, fairness, transparency, and competitiveness by CRA as the independent RFP Manager. CRA oversaw all phases of the RFP, including design, communications with interested parties, bidding activities, and evaluation of Proposals.
2. CRA is not affiliated with Monongahela Power or any Mon Power affiliate and has no financial interest in any of the potential bidders, or in the outcome of the RFP. CRA does not own any generating facilities and cannot indirectly benefit from the transaction or the facility's operation.
3. The process was executed consistent with all pre-determined evaluation criteria and the Proposals received in response to the RFP were thoroughly reviewed by CRA prior to presenting the results to Mon Power for advancement to the detailed negotiation phase.

Charles River Associates

February 27, 2017

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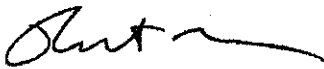
## CONCLUSION

CRA recommends that Mon Power designate the Allegheny Energy Supply Company's Pleasants facility located in Pleasants, West Virginia the winning generating facility bid and advance that proposal to the detailed negotiation stage. There were no qualifying or non-qualifying bids for demand resources submitted in association with this RFP and therefore there is no recommended winner in that portion of the process. Through this Opinion Letter, CRA confirms that the process used to solicit and evaluate Proposals was executed consistent with the process as defined and envisioned by CRA and Mon Power at the outset. In CRA's opinion, the RFP was performed in a transparent, fair and nondiscriminatory manner and no Mon Power affiliate was given an undue advantage or preference in the RFP.

Please do not hesitate to contact me should you have any questions.

Sincerely,

Charles River Associates



Robert Lee  
Vice President

cc: Dave Hunger, Charles River Associates

Exhibits:

1. List of Pre-Qualified Bidders (generation and DR)
2. Information on Conforming Bids
3. Information on Non-Conforming Bids

EXHIBIT 1

List of Pre-Qualified Bidders

Table 1.1: Summary of Pre-Qualified Bidders

Number of Pre-Qualified Existing Generation Facilities	3
Number of Pre-Qualified Planned/ New Generation Facilities	6
Number of Pre-Qualified Demand Resources	2
Total Number of Pre-Qualified Bidders	11

Table 1.2: Pre-Qualified Demand Resources

Bidder Name	Facility Type
EnerNOC, Inc.	Demand Resource
Enerwise Global Technologies Inc. d/b/a CPower	Demand Resource

The remaining pages of  
Exhibit RJJ-1 to

DIRECT TESTIMONY OF  
ROBERT J. LEE

are provided only in confidential, unredacted form

Monongahela Power Company

REQUEST FOR PROPOSALS

for

Power Supply Generation Facilities and/or Demand Resources

Issued:

December 16, 2016

Proposals Due:

February 3, 2017, 5:00PM EPT

Web Address: [www.MonPower-RFP.com](http://www.MonPower-RFP.com)

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9	Regulatory Approvals .....	38
10	Credit Qualification and Collateral .....	38
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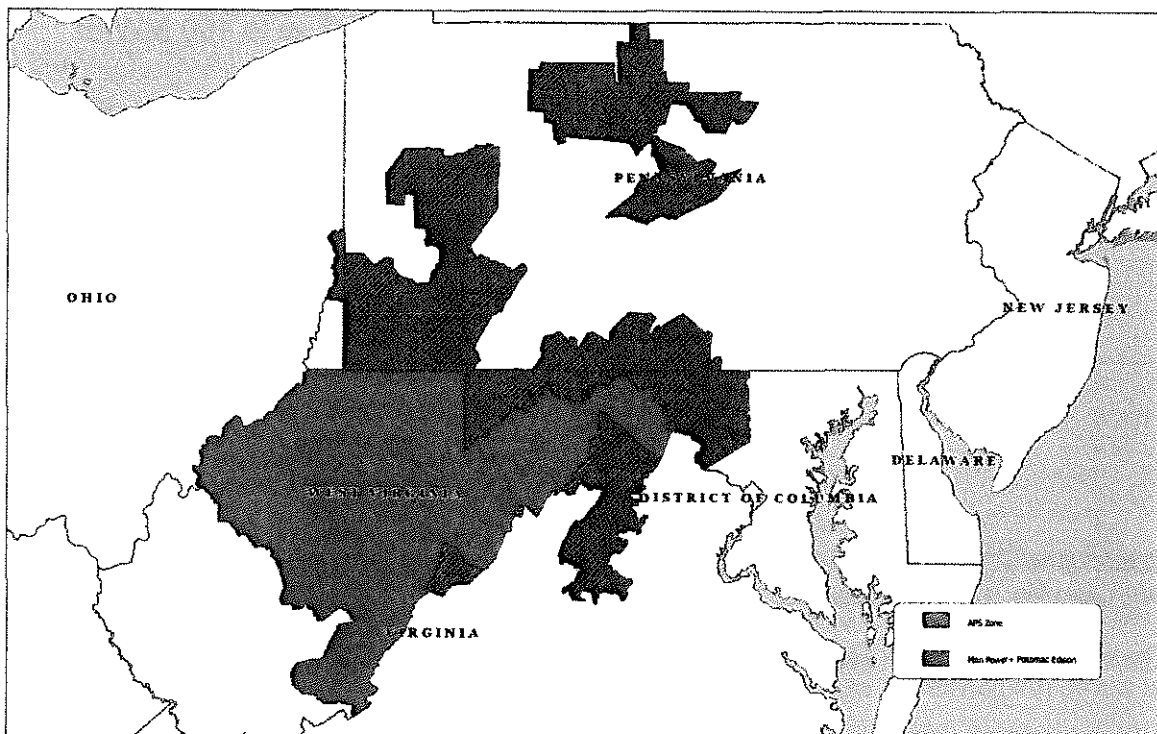
## **Appendices**

Notice of Intent.....	Appendix A
Non-Disclosure Agreement.....	Appendix B
Pre-Qualification Application.....	Appendix C
Asset Purchase Agreement.....	Appendix D
Demand Resource Purchase Agreement.....	Appendix E

## 1 RFP Overview

### 1.1 Introduction

Monongahela Power Company ("Mon Power") does business in the State of West Virginia as a regulated public utility and generates, transmits and distributes electricity for sale in West Virginia and the PJM Interconnection, L.L.C. ("PJM") regional electricity market. Mon Power, headquartered in Fairmont, West Virginia, currently serves approximately 390,000 electric customers located across approximately 13,000 square miles of West Virginia. Mon Power also provides generation supply to The Potomac Edison Company's West Virginia customers, numbering approximately 135,000. Mon Power's electric portfolio consists of 3,700 megawatts ("MW") of generation capacity, including approximately 160 MW of non-utility generator ("NUG") resources, over 2,000 miles of transmission lines at voltages ranging from 69 kilovolts ("kV") to 500 kV, and more than 25,464 circuit miles of distribution lines at voltages ranging from 2.4 kV to 34.5 kV in West Virginia. Mon Power owns a mix of generating resources consisting of fossil-fuel plants and hydroelectric pumped storage. Additionally, Mon Power purchases certain capacity and energy from NUGs and PJM, a regional transmission organization that operates the wholesale electric grid in the Mid-Atlantic region of the United States.





In 2002, Mon Power became a member of PJM. As a result, Mon Power transferred operational control of its transmission assets to PJM.

Mon Power is a wholly-owned subsidiary of FirstEnergy Corp. ("FE") (NYSE: FE). For more information about Mon Power, visit its website at [www.firstenergycorp.com/mon\\_power](http://www.firstenergycorp.com/mon_power).

## **1.2 Purpose**

Mon Power is committed to providing a reliable supply of electric power to its customers. In December 2015, Mon Power filed an Integrated Resource Plan ("2015 IRP") with the Public Service Commission of West Virginia ("PSC") that identified a significant shortfall in generation compared to its load over the following fifteen (15) year period.<sup>1</sup> Since then, Mon Power has evaluated its generation portfolio based on recent rule changes in the PJM wholesale markets, and concluded that it may be in the best interest of both Mon Power and Potomac Edison-West Virginia and their customers to seek to sell its ownership stake in the Bath County Pumped Storage Project ("Bath County Project") located in Warm Springs, Virginia.<sup>2</sup> Mon Power has updated its load forecast from the 2015 IRP, and after taking into account the impact of the presumed sale of the Bath County Project, has identified a capacity shortfall of approximately 1,045 MW by 2020 that rises to 1,400 MW by 2027. Through this RFP, Mon Power seeks to satisfy this capacity shortfall through a combination of an approximately 1,300 MW (UCAP) of generation capacity and up to 100 MW of demand resources.

In order to manage its capacity needs and ensure an adequate level of reliable generation supply for its customers, Mon Power hereby issues this RFP to:

1. acquire a generation facility or facilities that, at a minimum, meet established industry-wide reliability and performance criteria, or certain

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<sup>1</sup> Monongahela Power Company and The Potomac Edison Company, 2015 Integrated Resource Plan, Case No. 15-2002 (filed Dec. 30, 2015).

<sup>2</sup> The potential sale of the Bath County Project will be considered via a separate RFP process that will be run concurrent with this RFP.

developmental requirements for new or planned electric generation facilities (described further in Section 4); and

2. acquire demand resources that satisfy the criteria described below to satisfy a portion of the identified future capacity needs (described further in Section 5).

Throughout this RFP document, the products described above are referred to collectively as the "Capacity Assets." Proposals may be for either or both of the Capacity Assets.

Accordingly, you are invited to submit a written, binding proposal ("Proposal") in accordance with the requirements described in this Request for Proposals ("RFP"). Entities that submit a Proposal are referred to as Respondents ("Respondents")

Mon Power has retained Charles River Associates ("CRA") to manage the RFP process for the purpose of creating this RFP and soliciting Proposals. CRA also will serve as the independent third party to evaluate all Proposals on behalf of Mon Power. CRA will administer this process through its dedicated RFP website (see Section 2.2). Responses to this RFP should be sent to the RFP Manager via email to [MonPower-RFPManager@crai.com](mailto:MonPower-RFPManager@crai.com).

The milestone dates for this RFP process are presented below. Additional information about dates and deadlines for the RFP is provided in Section 2.4.

- |   |                   |
|---|-------------------|
| • Issue RFP                                       | December 16, 2016 |
| • Notice of Intent w/ Pre-Qualification Documents | December 23, 2016 |
| • Notification of Pre-qualification               | January 6, 2017   |
| • Proposals Due                                   | February 3, 2017  |

## **2 Information and Schedule**

### **2.1 Information Provided to Potential Respondents**

This RFP and all of its Appendices and forms are available on the RFP website [www.MonPower-RFP.com](http://www.MonPower-RFP.com). Interested parties are expected to be able to download this RFP with its required forms and complete the forms in Microsoft Word, Excel, and/or PDF format. Respondents should submit properly completed forms by the specified deadline to the RFP Manager via email ([MonPower-RFPManager@crai.com](mailto:MonPower-RFPManager@crai.com)). CRA will accept only Proposals that are complete. Proposals that are nonconforming, not complete, or that are mailed, or

hand delivered may be deemed ineligible and may not be considered for further evaluation.

CRA will send an electronic mail notice on or after December 16, 2016, to parties that it considers likely participants in this RFP. Additionally, a press release of this RFP will be published on [www.MonPower-RFP.com](http://www.MonPower-RFP.com) on or after December 16, 2016.

By submitting a Proposal in response to this RFP, the Respondent certifies that it has not divulged, discussed, or compared any commercial terms of its Proposal with any other party (including any other Respondent and/or prospective Respondent), and has not colluded whatsoever with any other party.

## **2.2 Information on the RFP Website**

The information on the RFP website ([www.MonPower-RFP.com](http://www.MonPower-RFP.com)) contains the following:

- This RFP and associated appendices;
- Template Information Form Addendum (as described in Section 6.1);
- Form of Notice of Intent;
- Form of Non-Disclosure Agreement ("NDA");
- Form of Pre-Qualification Application including Credit Worthiness information;
- Form of Asset Purchase Agreement ("APA");
- Form of Demand Resource Purchase Agreement ("DR Agreement");
- Frequently asked questions and answers about this RFP; and
- Updates on this RFP process and other relevant information.

## **2.3 Questions**

All questions regarding the content of this RFP should be submitted in writing to the RFP Email Address ([MonPower-RFPManager@crai.com](mailto:MonPower-RFPManager@crai.com)) or via the RFP website. Respondents' questions and CRA's answers will be posted on the RFP website on a periodic basis. Other than questions and answers submitted through the RFP Email Address and posted on the RFP website, no other explanations or interpretations of this RFP will be given. Written questions will be

accepted by CRA until five (5) days before the date on which Proposals are due. Please note that such questions will not be treated as confidential. Questions and answers that are posted on the RFP website will be scrubbed of information identifying the party that originally asked the question.

In the event that a given Respondent has a question or seeks clarification or explanation of any data or information provided in this RFP, such Respondent is responsible for obtaining the desired information by submitting a written question to CRA through the RFP Email Address by no later than five (5) days before the date on which Proposals are due.

Any and all communications regarding this RFP will be submitted through the RFP Email Address, or posted on the RFP website. Under no circumstance should Respondents attempt to contact Mon Power or CRA employees directly with any matters related to this RFP.

Proposals containing material omissions will be deemed non-responsive and may be deemed ineligible and may not be considered for further evaluation.

However, while evaluating Proposals, CRA may require clarification or additional information about a given Proposal as part of its review. In such a case, CRA may request additional information about the Proposal from the Respondent. All requests will be made via email to the designated Respondent contact, and the Respondent will be required to respond to the request within five (5) business days of receipt of such request or CRA may disqualify Respondent's Proposal.

## **2.4 Schedule**

The following schedule and deadlines apply to this RFP. Mon Power and CRA reserve the right to extend or otherwise modify any portion of this schedule at any time or terminate this RFP process at their discretion at any time prior to contract execution.

- Eastern Prevailing Time ("EPT") means Eastern Standard Time or Eastern Daylight Time, whichever is in effect in Fairmont, West Virginia on any date specified.
- All Proposals are due by 5:00 p.m. EPT, February 3, 2017. Proposals received after the specified date and time will be disqualified from further evaluation.
- Mon Power expects to execute the definitive agreements for acquisition of the Capacity Assets (the "Definitive Agreement(s)") no later than March 14, 2017. Below is the expected timetable for this RFP process, which is subject to change.

<b>Step</b>	<b>Timetable</b>
RFP Issued	December 16, 2016
Notice of Intent, Non-Disclosure Agreement, and Respondent Pre-Qualification Application Due	5:00 p.m. EPT, December 23, 2016
Respondents Notified of Results of Pre-Qualification Application Review	5:00 p.m. EPT, January 6, 2017
Proposal Due	5:00 p.m. EPT, February 3, 2017 <sup>3</sup>
Proposal Evaluation	February 4 – February 24, 2017
Proposal Evaluation Completion Target and Recommendation to Mon Power	February 24, 2017
Due Diligence and Negotiations Period	February 24 – March 14, 2017
Definitive Agreement(s) Executed with Selected Respondent(s)	March 14, 2017
Applications filed with the PSC and the Federal Energy Regulatory Commission ("FERC")	March 15, 2017

### **3 RFP General Requirements**

Proposals must meet the following criteria. CRA may reject, without further review, any Proposals that do not meet the following criteria:

#### **3.1 Respondent Pre-Qualification**

To be eligible to submit a Proposal in response to this RFP, Respondents must be pre-qualified. To pre-qualify, a Respondent must submit the following items:

- a completed Notice of Intent (Appendix A);
- a completed Non-Disclosure Agreement (Appendix B); and
- a completed Pre-Qualification Application (Appendix C), including credit worthiness information.

These items are to be submitted to the RFP Manager no later than the date and time specified pursuant to Section 2.4 above.

CRA will notify Respondents by January 6, 2017 that they have successfully pre-qualified to submit a Proposal. Potential Respondents that have not submitted a Pre-Qualification application package by December 23, 2016 will not have their Proposals considered.

#### **3.2 Multiple Proposals**

In the event that multiple Proposals for different Capacity Assets are submitted by the same Respondent, the Respondent must indicate whether the Proposals are to be evaluated independently of one another.

#### **3.3 Non-Disclosure Agreement**

This RFP contains an NDA form. Respondents shall submit a signed version to the RFP Email Address ([MonPower-RFPManager@cra.com](mailto:MonPower-RFPManager@cra.com))(see Section 2.2) by 5:00 p.m. EPT, December 23, 2016. Respondents may download the NDA form from [www.MonPower-RFP.com](http://www.MonPower-RFP.com).

#### **3.4 Valid Proposal Duration**

Proposal pricing must be valid for ninety (90) days following the Proposal Due Date of February 3, 2017. Pricing for a Proposal that is selected must remain valid until the transaction receives all necessary regulatory approvals.

### **3.5 Acknowledgement of RFP Terms and Conditions**

The submission of a Proposal shall constitute Respondent's acknowledgment and acceptance of all the terms, conditions and requirements of this RFP.

## **4 Generation Facility Proposals**

Mon Power seeks to procure ownership of a dispatchable generation facility or facilities<sup>4</sup> amounting to approximately 1,300 MW of Unforced Capacity ("UCAP").<sup>5</sup> The acquisition is expected to take place in 2017 following necessary regulatory approvals. Proposals are expected to be for the sale to Mon Power of 100% of the specified generation facility or facilities from which dispatchable output will be delivered. Proposed generation facilities should have no major operational limitations that reduce their ability to run for extended periods. Mon Power is willing to purchase a generation facility or facilities owned by multiple owners provided that the owners submit a joint proposal where full ownership of the facility or facilities is being offered.

### **4.1 Content Requirements for Generation Facility Proposals**

This section describes Mon Power's requirements for the content and evaluation of any Proposal that is submitted in response to this RFP as an offer to sell a generation facility to Mon Power. Proposals that do not include all of the required information may be deemed ineligible and may not be considered for further evaluation. If it appears that certain information has inadvertently been omitted from a Proposal, CRA may but is not obligated to contact the Respondent to obtain the missing information, per Section 2.3. If, during the RFP process, there is a material change to the generation facility or the circumstances of the

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<sup>4</sup> Dispatchable generation, as that term is used in this RFP, shall have the meaning set forth on PJM's website, namely Dispatchable generation means "generation that can follow dispatch instructions between economic minimum and economic maximum."

<sup>5</sup> Unforced Capacity, as that term is used in this RFP, shall have the meaning set forth in the PJM Reliability Assurance Agreement, namely Unforced Capacity "shall mean installed capacity rated at summer conditions that is not on average experiencing a forced outage or forced derating, calculated for each Capacity Resource on the 12-month period from October to September without regard to the ownership of or the contractual rights to the capacity of the unit."

Respondent that could affect the outcome of the RFP evaluation, the Respondent is obligated to inform CRA accordingly.

The winning Respondent must provide such additional information and data as may be requested by Mon Power to support regulatory review of the generation facility purchase transaction.

All Proposals must include a table of contents and provide concise and complete information on the topics described below, organized as follows:

#### *4.1.1 GENERATION FACILITY EXECUTIVE SUMMARY*

Proposals must include an executive summary of the generation facility's characteristics including any unique aspects and benefits.

#### *4.1.2 GENERATION FACILITY GENERAL INFORMATION*

##### **4.1.2.1 Respondent's Information**

Proposals must be submitted in the legal name of the actual party or the ultimate "upstream" organizational entity that would be bound by any resulting Definitive Agreement with Mon Power. Proposals must be authenticated by an officer or other employee who is authorized to bind Respondent to the Definitive Agreement based on the Proposals.

The first page of the Proposal shall list the Respondent and the Respondent's Contact Information (Name, Title, Phone, Email Address, and Mailing Address).

Proposals must include: information on the Respondent's corporate structure (including identification of any parent companies); a copy of the Respondent's most recent quarterly report containing unaudited consolidated financial statements signed and verified by an authorized officer of Respondent attesting to its accuracy; and a copy of Respondent's most recent three (3) annual reports containing audited consolidated financial statements. If such financial data is not available, as much comparable information as possible should be provided.

##### **4.1.2.2 Respondent's Experience**

The Respondent must provide a description of prior experience and qualifications as it relates to the execution of the Proposal. This should incorporate a summary of the experience and qualifications of the key contributors, including the total number of employees and prior experience and qualifications of any key developers, engineering, procurement and construction contractors, fuel managers, or other key contributors relating to the generation facility.



Respondents shall state the name of the generating facility, the county where the generating facility is located, the owner of the facility, and the commercial pricing node associated with the facility, if applicable. This information should be accompanied by a map(s) of the asset's location, as well as maps of any planned infrastructure upgrades in support of the generation facility.

CRA will accept Proposals for generation facilities located both inside and outside Mon Power's service territory, but facilities must be located inside the Allegheny Power Systems ("APS") zone in the PJM-region. Non-conforming bids by Respondents to sell a generation facility or facilities located outside of the APS zone may be considered if this RFP does not receive at least three qualified bids, and provided that the Respondent and proposed generation facility satisfy all other requirements found in Sections 3 and 4 of this RFP.

For a new or planned generation facility to be considered, the Respondent shall submit a copy of an executed pro-forma PJM Interconnection Service Agreement and Interconnection Construction Services Agreement, as well as a copy of a completed PJM Facilities Study and a PJM System Impact Study for the project for the proposed delivery point. Respondents submitting Proposals for a new or planned generation facility also must submit a copy of a fully executed engineering, procurement and construction ("EPC") contract.

#### **4.1.2.3 Generating Facility Capacity Characteristics**

Respondents shall state the nameplate capacity, net summer operating capacity, net winter operating capacity and the UCAP of the generation facility for the 2016/2017 PJM planning year. Respondents also should provide the expected UCAP for the PJM 2020/2021 Reliability Pricing Model ("RPM") Base Residual Auction. Generation assets offered must have a minimum UCAP of 100 MW.

#### **4.1.2.4 Acquisition Date**

Respondents shall assume that the acquisition of the generation facility would be closed and title transferred in 2017, subject to regulatory approvals.

#### **4.1.2.5 Capacity Availability**

For Proposals to sell an existing generation facility to Mon Power, the existing generating facility must have cleared in the RPM capacity auctions for 2018/2019 and 2019/2020 Delivery Years or be eligible to participate in the incremental RPM auctions for these specified delivery years.

For new or planned generation facilities, Mon Power will accept generation that qualifies as a Capacity Performance resource(s) in the 2020/2021 Delivery Year; and in all delivery years thereafter.

Respondents shall also describe the expected useful life of the generation facility.

#### **4.1.3 GENERATION FACILITY TECHNICAL AND ECONOMIC DETAIL**

##### **4.1.3.1 Generation Technology**

Respondents shall describe the generation technology of the facility, including the make, model, and name of the supplier of all major equipment.

All Proposals to sell a generation facility to Mon Power must utilize an existing, proven technology, with demonstrated reliable generation performance that is capable of sustained, predictable operation.

##### **4.1.3.2 Dispatch Characteristics**

Proposed generation facilities shall be fully dispatchable. Respondents shall provide the dispatch characteristics of the generation facility, including, but not limited to:

- minimum load level;
- ramp rates (up and down);
- number of gas turbines that can be started simultaneously (if applicable)
- heat rate curve for normal operations (e.g., the coefficients of a fifth-order equation), including the no load and full load heat rates;
- fuel consumption and heat rate during startup, including startup time and the total number of hours annually the facility can be assumed to be in startup mode;
- fuel consumption and heat rate when the facility is being shutdown, including how long shutdown takes and the total number of hours annually the facility can be assumed to be in shutdown mode;
- an estimation of the total number of hours annually that the facility operates at full load;
- capability decreases as a result of ambient temperature increases;
- supplemental firing capability and any operating limitations caused by such factors of design; and
- any other operational limitations that reduce unit availability or reduce a unit's ability to dispatch or regulate.

Regarding any major current and/or historical operational limitations, Respondents shall provide a description of the root causes of the limitations (e.g., OEM design, material condition of the facility, environmental permits, etc.).

Proposals for non-dispatchable resources, such as intermittent resources, will not be considered in this RFP.

#### **4.1.3.3 Revenues and Operating Costs**

For existing generation facilities, Respondents shall provide a detailed breakout of the facility's actual annual revenues for each of the past five (5) years. This will include energy, capacity, and ancillary service market revenues, as well as any other revenues the facility earned. Associated with these revenues, Respondents shall state the estimated annual operation and maintenance costs of the facility on a fixed (\$) and variable (\$/MWh) basis and provide the actual annual operation and maintenance costs of the facility for each of the past five (5) years in nominal dollars.

Respondents shall provide a detailed breakout of the generation facility's estimated and actual annual [fixed] costs for the following categories: labor, benefits, materials and all others for the past five (5) years. Respondents shall provide a breakdown of the number of people employed at the facility, including permanent and contracted employees, and whether those employees are organized under any labor agreement.

If, for any reason, fixed or variable costs for the generation facility are expected to change in the foreseeable future (e.g., following planned upgrades, etc.), the Respondent should provide both the new expected cost(s) and the year(s) in which the costs are expected to change.

Respondents shall also state and describe any property, state, and local taxes and tax abatements associated with the generation facility, including West Virginia Business and Occupation ("B&O") and local property taxes.

All cost data should be provided both for the generation facility under its current owner and as costs might be different under Mon Power ownership.

For new generation facilities, Respondents shall provide information on capacity levels (in UCAP) that have already cleared in the PJM capacity market, and associated revenue.

New generation facilities also must provide reasonable expectations for all of the above details associated with plant revenues and costs, including market revenues, fixed and variable operations costs, expected upgrades and service timing, and taxes.

#### **4.1.4 GENERATION FACILITY OPERATING CONSIDERATIONS**

##### **4.1.4.1 Generation Facility Operating Data**

For an existing generation facility, Respondents shall provide historical operating data consisting of: (i) the commercial operation date of the facility; (ii) the annual run-time hours (per unit, if applicable); (iii) the annual operating cycles per year (per unit, if applicable); (iv) the annual facility capacity and availability factors; and (v) the PJM equivalent forced outage rate demand ("EFORd"). The above annual data may be limited to the most recent five (5) years. The EFORd should correspond to the UCAP amounts awarded for the last five (5) Planning Years (as defined by PJM). Respondents shall provide a breakdown of EFORd by failure mode or NERC/GADS category. Respondents shall provide a description of the major contributors to the generation facility EFORd. If there are particular costs associated with maintaining the EFORd of a generation facility, those must be provided.

Respondents shall provide details on any current generation facility equipment issues and concerns, including the potential drivers and recommended mitigation procedures for the issues and/or concerns. These may include, but are not limited to, any operation of the turbine, generator, or boiler outside recommended parameters established by OEM, compromised turbine or compressor blades, etc. Respondents shall provide a list of any redundant equipment that is currently bypassed or out of service, and the related reason. Respondents will also provide historical information on such issues and concerns that have arisen, how they were resolved, and the associated costs for the last ten (10) years of operation, or for the commercial life of the generation facility, whichever is lesser.

Respondents shall provide maintenance history for the lesser of the past ten (10) years of operation, or the commercial life of the generation facility consisting of: (i) dates of last full unit inspection and findings based on OEM recommendations; and (ii) outstanding OEM recommendations remaining to be implemented, including the cost and outage duration for any major maintenance requirements expected over the coming ten (10) years. Respondents shall provide the outage reports for major planned and forced outages for each of the past five (5) years.

For new or planned generation facilities, Proposals should include the manufacturer or developer quoted expected performance, as well as historical performance of similar facilities in PJM.

##### **4.1.4.2 Generation Facility Operating Plan**

Proposals should include a summary of the operating plan for the generation facility. Such plan should include software management system(s) and personnel roles and responsibilities for operating, maintaining and servicing the

facility, including any contractual arrangements currently in place. A Respondent shall provide an overview of key scheduled outage and maintenance plans, as well as plans for procuring and maintaining key spare parts.

For new or planned generation facilities, this should include a summary of the intended operating plan for the facility. The plan should include software management system(s) planned or in use (e.g., SAP, etc.), any third-party roles and responsibilities for operating, maintaining and servicing the facility, including any contractual arrangements to be executed. A Respondent should provide an overview of key scheduled outage and maintenance plans, as well as plans for procuring and maintaining key spare parts.

#### **4.1.4.3 Generation Facility Fuel Supply**

Respondents shall provide a description, including detailed cost information, contract duration, and material contract terms (including whether fuel contracts are take or pay, minimum volume requirements, price reopeners, assignability or termination provisions) of all fuel purchase, storage, and transport agreements related to the generation facility Proposal. Cost of fuel commodities should be provided separately from the cost of fuel transportation. Respondents also must list any provisions or other considerations that would prohibit or impair the assignment and/or affect the performance obligations of either party under the respective contract(s). Respondents should describe fuel purchase and transport to the generation facility, as well as any existing or known potential operational restrictions or impediments on such fuel purchase and transportation. Respondents also are required to provide a description of the existing fuel supply (and storage) infrastructure serving the generation facility, including the infrastructure for the delivery of secondary fuel for dual-fuel resources. However, Mon Power, through this RFP, is seeking to purchase a generation facility, and it is Mon Power's sole discretion whether to assume any contract or contracts associated with the proposed generation facility related to fuel commodities and/or fuel transportation.

Proposals should describe, to the extent possible, their fuel sourcing strategy, including from where their fuel is sourced, with a focus on whether it is sourced from inside the state of West Virginia. If a respondent has historically sourced fuel from outside of West Virginia, it may choose to provide detail on the costs that would be associated with sourcing fuel from within West Virginia (costs for commodity should be provided separately from transport) by submitting a separate Proposal.

Proposals should describe the generation facility's ability to access a reliable fuel supply that would support operation for any hour throughout the year, including the plant's on-site fuel storage and dual-fuel capabilities, if applicable. Proposals for coal generation facilities should provide the number of days of coal the facility

is capable of storing onsite. Proposals for gas generators must have dual-fuel capability and the ability to store three (3) or more days of fuel, and/or firm gas transportation contracts. Proposals that do not meet these requirements will be disqualified.

#### *4.1.5 GENERATION FACILITY ENVIRONMENTAL CONSIDERATIONS*

##### **4.1.5.1 Emissions and Waste Disposal Compliance**

Proposals are expected to provide information regarding current and planned measures taken to comply with local, state, and federal environmental regulations. Respondents offering coal fired generation facilities should include information regarding current and planned measures to comply with coal ash regulations, as well as a description of any other solid waste disposal considerations. Respondents offering coal fired generation facilities also must disclose any long-term contracts for the sale and/or disposal of Coal Combustion Residuals ("CCRs"), or other beneficial use plans for CCRs. Proposals should provide information on expected upgrade costs, outages associated with upgrades, increased operations and maintenance costs, operational limitations, permit costs, and administrative costs associated with environmental regulations.

Respondents also shall provide a summary of any environmental control equipment installed at the facility and the emission rates for NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>, VOC, PM and CO in units of lb/mmBTU.

Note that the cost of compliance with any current environmental laws or regulations should be addressed in the Proposal.

##### **4.1.5.2 Water Supply**

Respondents shall provide a detailed description of the water supply, including but not limited to, contract term, water usage, and cost of water for the generation facility. Respondents shall also provide the status of the facility's National Pollutant Discharge Elimination System ("NPDES") permits, including, but not limited to, permit conditions, permit violations reported over the last five (5) years, the timing of next permit renewal, and any other known concerns.

If applicable, Respondents shall provide a summary of the facility's water chemistry program, including key systems and suppliers, and its performance in the most recent year.

##### **4.1.5.3 Permits**

The generation facility must have all relevant environmental and other permits necessary for operation and maintenance. Respondents shall provide a

description of all permits currently in place for the operation and maintenance of the facility (e.g., Spill Prevention Containment and Control plans, Title IV and Title V permits of the Clean Air Act, Cap and Trade Permits, NPDES permits, Water Withdrawal, and Pollution Incident Prevention Plan). Respondents must also state whether there are any provisions that would prohibit the assignment of such permits and/or any consents required for the assignment of such permits.

Respondents shall describe any operating limitations imposed by permitting or environmental compliance that limit plant availability.

Respondents shall provide a description of any identified environmental liabilities (e.g., potential site remediation requirements, etc.) for the facility.

#### *4.1.6 GENERATION FACILITY FINANCIAL CONSIDERATIONS*

##### **4.1.6.1 Capital Expenditures**

Respondents shall provide historical and budgeted capital expenditures for the generation facility. Historical capital expenditures shall be provided for each of the past five (5) years in nominal dollars. Planned and budgeted capital expenditures shall be provided for each of next five (5) years in nominal dollars along with a description of the projects involved. Respondents also should disclose any known capital expenditure needs outside of the five-year time horizon that are expected to exceed \$1 million dollars.

Respondents shall supply a summary list of all spare parts and components currently owned by the facility and their approximate dollar value. Respondents shall also identify any spare parts or components that are currently needed and/or on order as of the date the Proposal is submitted.

##### **4.1.6.2 Acquisition Price**

Respondents shall submit an acquisition price consisting of a single fixed payment that is inclusive of all monetary consideration for the generation facility, working inventory, and, if applicable, ancillary facilities and contractual arrangements (e.g., for fuel supply and transportation, maintenance, pollution control bonds, etc.). Respondents must submit their best and final price with their Proposal. Respondents must provide details regarding any liabilities that Mon Power might assume as a buyer of a generation facility.

For new or planned generation facilities, the price offered in the Proposal should include all costs associated with providing a completed generating asset whose full output will reside in the APS zone in the PJM transmission system. This includes, in particular but without limitation, costs associated with transmission

interconnection, including engineering studies, siting, permitting, acquisition and construction.

A Respondent may have fuel inventories at a generation facility site. Such fuel has market value. If the intention would be for that fuel to transfer along with the generation asset, the Respondent should separately list the type, quantity, and expected price of the fuel at the time of sale. The resulting cost may then be provided as a credit against the acquisition price.

#### **4.1.6.3 Other Contractual Commitments**

Respondents shall provide a description, including detailed cost information, of any other contracts that are currently necessary for generation facility operations, including, but not limited to, long-term service agreements, state union labor contracts and/or technical support contracts, agreements related to capacity and/or energy sales from the facility and any capacity offers submitted to any ISO/RTO related to the generation facility that if accepted would be binding on Mon Power as a result of an acquisition. Respondents must also state whether there are any provisions that would prohibit the assignment and/or affect the performance obligations of either party under the respective contract, including transfer or cancellation fees.

#### ***4.1.7 GENERATION FACILITY LEGAL CONSIDERATIONS***

##### **4.1.7.1 Generation Facility Asset Purchase Agreement**

This RFP contains a proposed form of the APA. Respondents should download the APA from the RFP website ([www.MonPower-RFP.com](http://www.MonPower-RFP.com)) and be ready to execute the APA immediately upon selection as the winning Respondent. A separate APA submitted by a Respondent will not be considered and may cause Respondent's Proposal to be disqualified.

##### **4.1.7.2 Legal Proceedings**

The Proposal should include a summary of all material actions, suits, claims or proceedings (threatened or pending) against Respondent, its Guarantor (if applicable) or involving the generation facility as of the Proposal due date, including but not limited to those related to employment and labor laws, environmental laws, or contractual disputes for the development, construction, maintenance, fueling, or operation of the facility.

##### **4.1.7.3 Material contingencies**

Proposals that have material contingencies, such as for financing, will not be considered.



#### *4.1.8 GENERATION FACILITY LOCAL ECONOMIC IMPACT*

Proposals should include a description of the expected use of any West Virginia fuels, labor, taxes, and other in-state resources for the development, construction and operation of the generation facility. Proposals should also describe and provide support for the expected economic benefits to the local community, region, and state of West Virginia, associated with the development, construction, and/or operation of the generation facility. These descriptions will supplement data that is to be provided in the Information Form Addendum on the same topic, as described in Section 6.1.

#### *4.1.9 GENERATION FACILITY, ADDITIONAL ITEMS SPECIFIC TO NEW FACILITIES*

All Proposals for new generation facilities must have a well-defined and credible development plan for Respondent to complete the development, construction, and commissioning of the facility on their proposed construction timeline. Information provided should include:

- roles and responsibilities of the companies involved in the design, development, procurement and construction of the facility. Information about key contributors should extend to the status of contractual relationship with each key contributor; key contractual assurances, guarantees, warranties or commitments supporting the Proposal, including an executed EPC contract, and any past experience of Respondent working with each key contributor;
- description of status of major equipment procurement, as well as processes for engineering, procurement, and construction bids and awards;
- description of the facility site and Respondent's rights (*i.e.*, whether owned, leased, under option) to such site. Please indicate whether additional land rights are necessary for the development, construction, and/or operation of the facility;
- discussion of the development schedule and associated risks and risk mitigation plans for that schedule, including whether there are contract commitments from contractors supporting the proposed schedule. The Respondent should be prepared to document and commit to a proposed development schedule, which should include a commercial operations date;
- discussion of the financing arrangements secured by the Respondent, including an overview of the sources of funds, and level of commitment from debt, equity, or other investors;

- discussion on permitting, including a list of all required permits, permitting status of each, and key risks to securing necessary future permit approvals;
- description of status in PJM queue process and presentation of documents described in Section 4.1.2.2; and
- financial information regarding guarantors and sources of equity funding along with either the Respondent's or guarantors' senior unsecured debt and/or corporate issuer ratings documentation from Moody's and Standard & Poor's showing the name of the rating agency, the type of rating, and the rating of the Respondent or guarantor.

Proposals that are not site-specific or do not currently have land control for the facility site will be disqualified from the evaluation process.

Mon Power will not assume any responsibility for the successful development, construction, and/or completion of a proposed facility. Accordingly, development schedule, budget, permits and approval risk will be the sole responsibility of the Respondent.

## **4.2 Generation Proposal Evaluation and Contract Negotiations**

### **4.2.1 INITIAL PROPOSAL REVIEW**

After the Proposal due date, CRA will review all responses for completeness, responsiveness and compliance with the minimum proposal eligibility requirements specified in Sections 3 and 4 of this RFP, and the Pre-Qualification Application in Appendix C. CRA will not accept unsolicited updated information from Respondents during the evaluation period. As a result of this screening, CRA may in its discretion either eliminate Proposals from further consideration, or contact Respondents to clarify issues or request additional information. CRA will make such requests in writing via email ([MonPower-RFPManager@crai.com](mailto:MonPower-RFPManager@crai.com)) and Respondent will be required to respond to the request within five (5) business days of receipt of such request or CRA may deem the Respondent's Proposal (see Section 2.3) ineligible and not in consideration for further evaluation.

### **4.2.2 EVALUATION COMPONENTS**

CRA will review and evaluate Proposals to identify the Proposal(s) that meets the capacity needs of Mon Power and provides the best combination of value, risk, and reliability for Mon Power and its customers. To accomplish this, CRA will assess each Proposal against a scoring system that includes cost and non-cost factors. This approach allows a thorough and efficient review that appropriately

weighs diverse factors and maximizes CRA's ability to compare Proposals on a level, objective basis. The Proposal(s) that are selected from the RFP process for recommendation to Mon Power will be those that earn the most points and represent a portfolio that most efficiently fulfills Mon Power's needs.

During the evaluation process, all Respondents' identities will remain confidential. Neither Mon Power nor its technical advisors will be made aware of the Respondent's identities during this time.

#### *4.2.3 COST FACTORS: NET PRESENT VALUE CALCULATION*

For each Qualified Proposal, CRA will calculate the net present value of expected customer impact ("NPV") for the full transaction associated with each Proposal. The NPV for each Qualified Proposal will be based on the data provided by the Respondent in accordance with Section 4.1 of this RFP, or provided in response to a Respondent-specific CRA information request as set forth below. NPV calculations will be based on standardized forecasts for energy and capacity market prices as well as future fuel prices. CRA will establish expected plant performance via a modeled dispatch for each Proposal. Some cost items, like labor rates, may be updated on a uniform basis to reflect expected costs should a generation asset become part of the Mon Power fleet.

Costs accounted for in the NPV calculations will account for compliance with existing environmental regulations and permits applicable to the proposed facility. This relates to local, state, and federal regulations. For coal fired resources, this should include coal ash regulations. Impacts considered will include, but not be limited to, upgrade costs, outages associated with upgrades, increased operations and maintenance costs, operational limitations, permit costs, and administrative costs. All such expected costs, both one-time and recurring, should be provided by the Respondent.

During this analysis, if a Proposal for a generation facility is to receive credit for the risk-reducing characteristics of its fuel arrangements, Respondent must provide the costs of those arrangements. Likewise, if a generation Proposal is to receive credit for sourcing fuel from within West Virginia and does not historically do so (with all or part of its fuel supply), Respondent must provide the costs of those alternative arrangements for CRA's consideration.

For Proposals based on new or planned generating assets, evaluation of revenues and plant performance in the NPV calculation will be based on CRA's dispatch modeling, based on quoted performance and PJM fleet average for similar technologies.

Analysis rules and projections will be developed by CRA and will reflect assumptions about the future trajectory of operating costs and capital

investments at generating units in the Mid-Atlantic United States. The rules used to make such projections will be applied by CRA consistently across all Respondents, as will all elements of the NPV analysis. Analysis rules are the proprietary property of CRA and Mon Power and will not be made available to Respondents.

The rules for the performing the NPV analysis will be determined by CRA and Mon Power in advance of the receipt and review of any Proposals. However, as part of the process of evaluating Proposals, cases may arise where, in order to adequately project asset costs or to facilitate a comparison between Qualified Proposals, the rules related to the NPV analysis may require review and/or adjustment. To the extent that any additions or adjustments are required, such additions or adjustments will be made solely by CRA. In such cases, any and all rules will be applied consistently across all Respondents.

While performing NPV analyses of Proposals, CRA may request additional or clarifying information from a given Respondent regarding unit performance, operating costs or other factors that influence the NPV calculation for a given capacity resource. Requests for additional information may be required to ensure that all Qualified Proposals are fairly and consistently evaluated. Consistent with Section 2.3, in such cases, Respondents will be required to respond within five (5) business days of receipt of such request. CRA will not consider unsolicited updates from Respondents related to the cost of any capacity resource.

#### *4.2.4 NON-COST FACTORS*

##### **4.2.4.1 Generation Facility Unit Location**

Mon Power, consistent with the requirements of the West Virginia Code, prefers Proposals that benefit the economy of West Virginia.<sup>6</sup> This evaluation criterion will reflect this preference.

##### **4.2.4.2 Generation Facility Fuel Usage**

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<sup>6</sup> See W. Va. Code §§ 24-1-1(a)(3), 24-2-1d(a) and (c), and 24-2-1g(a)-(b).

In addition to having an express preference for generating assets to be located within the State of West Virginia, the West Virginia Code also requires preference be given to generators that burn fuel sourced in West Virginia.<sup>7</sup> Accordingly, points associated with this criterion will reflect the proportion of fuel used at the plant that is sourced from West Virginia, as provided in Section 4.1.4.3. If a plant has not historically sourced fuel from West Virginia, but would be able to, such fuel arrangements may earn points in this category as long as the associated costs are provided for consideration in the NPV calculation.

#### **4.2.4.3 Fuel Risk**

Proposals are preferred that include fuel availability throughout the year, by having reliable primary fuel transportation, a secondary delivery route, and /or on-site storage for reliability in the event of temporary disruptions to the primary fuel transportation. In addition to the importance of overall reliability, fuel security is important in the context of PJM Capacity Performance requirements.

The Proposal will be evaluated based on CRA's assessment of the demonstrations made and how that would affect the Proposal's associated fuel risk and the impact on Mon Power's ability to serve its capacity needs. A Proposal may only earn points for characteristics for which the associated costs have been provided for consideration in the NPV calculation.

#### **4.2.4.4 Development, Permitting, and Approval Risks**

Mon Power has a need for capacity and expects to make commitments in the PJM capacity market based on the selected proposal. Therefore, Proposals will be evaluated based on the risks associated with proposed development plans and the associated contractual commitments. Additionally, plans for significant upgrades to existing facilities that are required to support continued operation will also be evaluated. Evaluation of the risk of development plans will include review of proposed schedule, budget, permitting, and required approvals. Proposals should include advanced and well-defined development plans.

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<sup>7</sup> See W. Va. Code § 24-2-1d(a) and (c),

Proposals for existing generation facilities will automatically receive all available points in this category. For evaluation of new generating assets, Proposals will be evaluated based on CRA's assessment of the demonstrations made and how such demonstrations would affect the Proposal's ability to ultimately be developed and serve Mon Power's needs.

#### **4.2.4.5 Ease of Integration**

Mon Power is seeking generation facilities that, if possible, can be cost-effectively and efficiently incorporated into its operating and corporate frameworks. CRA will review Proposals on this criterion as it relates to the following metrics:

- manufacture and vendor warranty transferability;
- fuel and fuel transportation contract flexibility and transferability;
- employee integration (union and non-union);
- assumption or ability to replace existing contracts (e.g., long-term service agreements, maintenance, etc.);
- compatibility of control systems;
- integration or cancellation of supply chain and other vendor agreements; and
- acceptability of standard agreements provided with this RFP.

Proposals will be evaluated based on CRA's assessment of the demonstrations made and how that would affect the Proposal's ability to be integrated into Mon Power's corporate and operating frameworks.

#### **4.2.4.6 Additional Proposal-Specific Risk Factors**

Certain risk factors may be unique to a Proposal and may be significant enough to independently impact the overall ability of the Proposal to meet Mon Power's needs. For example, if there is uncertainty whether a key operating permit/license for a facility can be renewed, thereby jeopardizing the ability of the facility to continue operating, then that risk will also be included as an independent consideration in the final summary evaluation. Additionally, if a Proposal includes a generation facility that has undergone frequent ownership changes in recent years, this could impact the generation facility due to differences in operational and maintenance practices and procedures, and could impact the quality of the data provided by Respondents for the proposed

generation facility. Any such risks should be disclosed along with a description of the associated measures taken to mitigate the risk. Failure to disclose a reasonably foreseeable risk or risks may be a basis to disqualify a Proposal.

Proposals with no such risks as determined by CRA will receive the full number of points available in this category. Proposals with asset- or project-specific risks that are not able to be fully mitigated may receive fewer points depending on CRA's assessment.

#### **4.3 Discussion of Proposals During Evaluation Period**

During the evaluation process, CRA may gather additional information from one or more Respondents. Any such communications with a Respondent shall in no way be construed as commencing contract negotiations, or as negotiations to purchase a generation facility from such Respondent.

#### **4.4 Selection of Highest Scoring Proposal(s)**

Once the total score for each Qualified Proposal has been calculated based on the RFP responses, CRA will identify the Proposal or portfolio of Proposals that meets Mon Power's capacity needs, amounting to approximately 1,400 MW UCAP to be acquired by Mon Power. To meet its needs, Mon Power may need to contract with multiple generating assets and/or demand resource(s). In order to secure the overall bundle of Proposals that meets Mon Power's capacity needs, there is no assurance that the individual, highest-scoring Qualified Proposal(s) will be selected.

#### **4.5 Contract Execution**

Mon Power does not, by this RFP, obligate itself to purchase any generation facility or facilities, or to execute the Asset Purchase Agreement with any Respondent who submits an offer to sell generation capacity to Mon Power and Mon Power may, in its discretion, reject any or all Proposals to supply generation capacity to Mon Power, as such are described in this RFP.

Selection of a winning Proposal shall not be construed as a commitment by Mon Power to execute the APA. During the period between when CRA makes its recommendation(s) to Mon Power and the date of execution of the APA, Mon Power will conduct additional due diligence on the Proposal which may include, but not be limited to, onsite visits, management interviews, legal and regulatory due diligence and detailed engineering assessments.

#### **4.6 Generation Proposal Fee**

The non-refundable fee for evaluating each Proposal for a generation facility is \$10,000. Respondents must pay a separate fee for each Proposal submitted. This sum will serve to defray evaluation costs by CRA and limit extraneous proposals. Respondents can find instructions for paying fees for their Proposal(s) on the RFP website.

### **5 Demand Resource Proposals**

Mon Power seeks to procure demand side resource(s) ("Demand Resource(s)" or "DR") from one or more Mon Power or Potomac Edison-West Virginia customers (each a "Customer") or Curtailment Service Provider(s) ("CSP")(collectively, "DR Supplier(s)"), in an amount up to 100 MW of Demand Resources located entirely within the Mon Power/Potomac Edison-West Virginia service territories. Proposals for Demand Resources are to be for assets that are eligible to participate in the PJM RPM capacity market as Capacity Performance resources and available for a four-year period starting in the 2021/2022 Delivery Year and that can meet the additional performance requirements of Mon Power as described in 5.1 and 5.3 hereof. The term of any agreement between Mon Power and a DR Supplier will be four (4) years (June 1, 2021 – May 31, 2025). Demand Resources will be procured from not more than a total of five (5) DR Suppliers.

Proposals for Demand Resources may be included with a Proposal to sell a generation facility to Mon Power as described in Section 4 hereof, or may be submitted on a standalone basis. In addition to the requirements set out in this section, Proposals offering a Demand Resource as a standalone product must also meet the RFP General Requirements set out in Section 3 herein.

#### **5.1 Demand Resource Product Definition**

To be eligible for participation in this RFP, the Demand Resources offered by a DR Supplier must:



- meet all eligibility and performance requirements for participation in the PJM RPM as a Capacity Performance demand resource, according to those definitions and requirements included in the currently-effective PJM Tariff and PJM Manual 18 as of the date of issuance of this RFP;<sup>8</sup>
- meet the additional performance requirements described in Section 5.3 herein;
- be sourced from locations entirely within the Mon Power/Potomac Edison-West Virginia service territories of the APS zone;
- be at least 10 MW and not more than 100 MW of demand resources (whether from a Demand Resource Customer or CSP) from a single location or aggregated from multiple locations, with the amount of demand reduction capability determined in accordance with the method described in 5.4.1;
- use an existing, proven technology that has demonstrated reliable demand reduction, as such is defined for the PJM footprint, which may include use of behind the meter generation; and
- reduce load by a predetermined amount within thirty (30) minutes of notification by Mon Power of a curtailment event without further direction or communication by or from Mon Power.

## **5.2 Demand Resource Purchase Agreement**

This RFP contains a proposed form of the DR Agreement that DR Supplier will be expected to execute with Mon Power. DR Suppliers should download the form from the RFP website ([www.MonPower-RFP.com](http://www.MonPower-RFP.com)) and be prepared to execute the DR Agreement upon notification of selection as a winning supplier of Demand Resource(s). Submission of a separate DR Agreement will not be considered and may cause a DR Supplier's Proposal to be disqualified.

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<sup>8</sup> DR Suppliers will be expected to ensure that their Demand Resource(s) continue to satisfy the requirements to be a Capacity Performance demand resource, as set forth in the PJM Tariff and PJM Manual 18 as of the date of issuance of this RFP, even if PJM makes changes to those requirements during the term of any agreement between Mon Power and a DR Supplier.

With respect to a Proposal from a CSP, Mon Power will not be responsible for communicating with or managing the relationship or performance of any customer within an aggregation ("Program Participants"), and the CSP shall be solely responsible for the same in all respects. Accordingly, the DR Agreement provides that with respect to a Proposal from a CSP, the CSP, and not Mon Power, shall be responsible for any and all Program Participant relationships, the performance of the obligations of any Program Participant within an aggregation, and payments to such Program Participants.

To mitigate risk, Mon Power may require the DR Supplier to provide additional collateral (*i.e.*, collateral in excess of that posted with the submission of the Proposal) upon execution of a DR Agreement. Mon Power reserves the right to determine the required form and amount of that additional collateral requirement for the winning Proposal.

### **5.3 Emergency Curtailment Events: Notification and Performance Requirements**

Demand Resources offered by a DR Supplier must meet notification and performance requirements applicable to an "Emergency Curtailment Event", as defined and described herein. For purposes of this RFP and any DR Agreement executed following this RFP, an "Emergency Curtailment Event" shall be one in which either Mon Power or PJM determines, in its respective sole discretion, that an emergency situation exists that may jeopardize the integrity of either the distribution or transmission system in the area. PJM, which is the regional transmission organization of which Mon Power is a member, may also initiate an Emergency Curtailment Event upon its sole determination that a pre-emergency situation exists.

#### **5.3.1 NOTIFICATION, PERFORMANCE, AND TEST REQUIREMENTS**

Emergency Curtailment Events initiated by PJM: For Emergency Curtailment Events initiated by PJM, DR Suppliers must agree to and be capable of meeting, throughout the entire term of the DR Agreement,<sup>9</sup> all notification and

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<sup>9</sup> DR Suppliers will be expected to ensure that their Demand Resource(s) continue to satisfy the requirements to be a Capacity Performance demand resource, as set forth in the PJM Tariff and PJM Manual 18 that are in effect as of the date of issuance of this RFP, even if PJM makes changes to those requirements during the term of the DR Agreement.

performance requirements applicable to Capacity Performance demand resources, as set forth in the PJM tariff and PJM Manual 18 at the time of the issuance of this RFP. During Emergency Curtailment Events initiated by PJM, PJM will notify Mon Power using the applicable notification methods and requirements set forth in the PJM tariff and PJM Manual 18. Then, Mon Power will notify the DR Suppliers of an Emergency Curtailment Event by issuing an electronic message to a device or devices such as telephone, facsimile, or email, selected and provided by the DR Supplier and approved by Mon Power. DR Suppliers must curtail Actual Measured Load to "Firm Contract Load" by the time specified by PJM and communicated by Mon Power to the DR Supplier.<sup>10</sup> During the entire period of an Emergency Curtailment Event initiated by PJM, the DR Supplier's Actual Measured Load must remain at or below its Firm Contract Load with such load being measured every clock half hour. A DR Supplier's Actual Measured Load shall be determined using the highest kW during the Emergency Curtailment Event. Mon Power will provide the DR Supplier a notification of when Emergency Curtailment Events initiated by PJM have ended.

Emergency Curtailment Events initiated by Mon Power: In addition to meeting the notification and performance requirements applicable to PJM Capacity Performance demand resources, DR Suppliers must also agree to and be capable of meeting the following additional notification and performance requirements applicable to Emergency Curtailment Events initiated solely by Mon Power:<sup>11</sup>

- DR Suppliers must curtail Actual Measured Load to "Firm Contract Load" within thirty (30) minutes of the time Mon Power sends such notification to the DR Supplier;
- an Emergency Curtailment Event requested solely by Mon Power or a transmission operator within the Mon Power/Potomac Edison-West

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<sup>10</sup> For purposes of this RFP and any Agreement resulting from this RFP, "Firm Contract Load" shall be that portion of a DR Supplier's electric load that is not subject to curtailment. The Firm Contract Load shall be decided by the DR Supplier at the time the DR Agreement is executed.

<sup>11</sup> Mon Power-initiated Emergency Curtailment Events may include events resulting from any distribution or transmission issues within the Mon Power and/or Potomac Edison-West Virginia service territories.

Virginia service territories of the APS zone may occur anytime during the year with no restrictions on the number of events or the duration of an event;

- notification of an Emergency Curtailment Event initiated solely by Mon Power will consist of an electronic message issued by Mon Power to a device or devices such as telephone, facsimile, or email, selected and provided by the DR Supplier and approved by Mon Power. Two-way information capability shall be incorporated by Mon Power and the DR Supplier in order to provide confirmation of receipt of notification messages. Mon Power will provide the DR Supplier a notification of when Emergency Curtailment Events have ended. Operation, maintenance and functionality of communication devices for receipt of notifications selected by the DR Supplier shall be the sole responsibility of the DR Supplier, and receipt of notifications set out in this paragraph shall be the sole responsibility of the DR Supplier; and
- during the entire period of an Emergency Curtailment Event initiated by Mon Power, the DR Supplier's Actual Measured Load must remain at or below its Firm Contract Load. A DR Supplier's Actual Measured Load shall be determined using the highest kW during the Emergency Curtailment Event as measured by Mon Power every clock half hour.

Mon Power will provide notice to PJM of any Mon Power-initiated Emergency Curtailment Event to ensure coordination.

Test Requirements: In a PJM delivery year (June 1st – May 31st) when an Emergency Curtailment Event has not been requested of DR Suppliers by PJM between June 1 and May 7, Mon Power shall declare an Emergency Curtailment Test Event of all DR Suppliers by May 31 in order to meet Mon Power's PJM test obligations for Load Management Resources. The duration of this test will be one hour. Mon Power will schedule the test and the DR Suppliers shall receive advance notification of the test. All provisions of the DR Agreement shall apply to this test.

### *5.3.2 REMEDIES FOR NON-PERFORMANCE*

If at any time during an Emergency Curtailment Event, a DR Supplier's Actual Measured Load exceeds one-hundred ten percent (110%) of its Firm Contract Load, the DR Supplier shall : (i) forfeit its payment for the month in which the Emergency Curtailment Event occurred; (ii) pay the sum of all payments received by the DR Supplier under the DR Agreement during the immediately preceding twelve billing months; and (iii) pay an Emergency Curtailment Event Charge which equals the amount of DR Supplier's actual hourly load during an Emergency Curtailment Event that exceeds the customer's pre-established

contract Firm Contract Load multiplied by three hundred percent (300%) of the PJM Real-Time Locational Marginal Price as defined and specified by PJM at the appropriate pricing node during the applicable hour(s). In addition, Mon Power will have the right, to be exercised at Mon Power's sole discretion, to suspend (for a minimum of 12 months) or terminate the DR Agreement with respect to a DR Supplier or, in the case of a CSP, with respect to one or more of that DR Supplier's customers.

If at any time during the Emergency Curtailment Event, a DR Supplier's Actual Measured Load is greater than one hundred percent (100%) and less than or equal to one-hundred ten percent (110%) of its Firm Contract Load during the Emergency Curtailment Event, the DR Supplier shall forfeit its payment for the month in which the Emergency Curtailment Event occurred and shall pay the Emergency Curtailment Event Charge described above.

A DR Supplier shall be responsible for, and shall indemnify Mon Power for, any PJM non-performance penalties, costs, charges or other amounts assessed by PJM and incurred by Mon Power as a result of non-performance attributable to the DR Supplier's Demand Resources, including but not limited to any Capacity Resource Deficiency Charges, Non-Performance Charges or similar charges or penalties under the PJM Agreements. In no event shall the penalties listed above for non-performance during an Emergency Curtailment Event be less than the sum of any PJM non-performance penalties, costs, charges or other amounts incurred by Mon Power as a result of non-performance attributable to the DR Supplier's Demand Resources and the Emergency Curtailment Event charge.

## **5.4 Demand Resource Proposal Requirements**

### **5.4.1 ACQUISITION PRICE**

DR Suppliers shall submit an acquisition price consisting of a single fixed amount denominated in units of dollars per megawatt-month (\$/MW-month), which is to apply for the term of the DR Agreement ("Acquisition Price"). If a Proposal is accepted, the DR Supplier will be compensated in an amount equal to the monthly Curtailable Load times the Acquisition Price.<sup>12</sup> The Proposal should

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<sup>12</sup> Curtailable Load shall be calculated for each DR Supplier by subtracting the contract Firm Contract Load from the DR Supplier's monthly highest thirty (30) minute integrated kW load occurring during the non-holiday weekday hours of 11 AM to 5 PM EPT. In no circumstance can

include all monetary consideration for the Demand Resource(s) offered. DR Suppliers must submit their best and final price with their Proposal.

Should Mon Power execute a DR Agreement with a Respondent, the contract price between Mon Power and the Respondent set forth in the DR Agreement will be the Acquisition Price submitted in its respective Proposal through this RFP process.

#### *5.4.2 DEMAND RESOURCE PRODUCT DESCRIPTION*

A Proposal is expected to include a description of the individual Demand Resource Customer, or the aggregation of the Program Participants of the CSP (including a list of curtailable Program Participants included in the Proposal with Electric Distribution Company ("EDC") 20-digit account numbers and individual expected load drop values (kW)), equipment and technology that will be deployed, and for CSPs, plans for recruiting, engaging, and maintaining Program Participants.

Mon Power must have a high degree of confidence in the DR Supplier's ability to manage Demand Resources to meet the RFP requirements. To address these risks, the Proposal should discuss the experience, qualifications, and financial strength of the DR Supplier and other key contributors. For CSPs, Proposals should describe well-defined roles and responsibilities of the DR Supplier and its Program Participants. The DR Supplier should describe successful protocols, if any, they have employed in the Mon Power APS Zone or other PJM zones for dispatching their Demand Resource(s).

For planned Demand Resource(s), the DR Supplier must fully describe specific plans detailing what equipment or technology it will deploy and/or utilize to support its operations. For CSPs, Proposals must describe DR Supplier's processes for aggregating Program Participants, how the DR Supplier intends to recruit and engage Program Participants, and/or provide lists of Program Participants. The Proposal also must describe curtailment systems and

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Curtailable Load be negative or can the Curtailable Load be in excess of the Curtailable Load cap agreed to and included in the DR Agreement.

procedures, budgeting for and structure of dispute resolution, and plans for communicating with Program Participants in connection with a curtailment period.

#### **5.4.3 DEMAND RESOURCE TECHNICAL REQUIREMENTS**

Under any DR Agreement executed as a result of this RFP, Mon Power shall acquire all rights, titles and interests in the Demand Resources including all the potential capacity and energy revenues associated with that Demand Resources. DR Suppliers must agree to cooperate with Mon Power in providing information needed to meet all PJM Demand Resource information requirements.

As described in more detail in the DR Agreement, the DR Supplier will assume all responsibilities and liabilities associated with providing the Demand Resources. Accordingly, Proposals offering Demand Resources must include the DR Supplier's acknowledgment and agreement that the DR Supplier is responsible for the following non-exhaustive list of activities and obligations:

- managing load reductions, including all notices, communications, controls, equipment, or other processes required;
- if the DR Supplier is a CSP, determining the number of Program Participants, if any, in its aggregation, the number of interruptible hours per customer, and the size of the Program Participants' load reduction;
- if the DR Supplier is a CSP, paying any Program Participants according to the CSP's agreement with those Program Participants. Such agreements shall be independent of Mon Power's DR Agreement with the CSP and must hold Mon Power harmless for any direct or indirect obligations or liability associated with the program; and
- paying penalties assessed pursuant to the DR Agreement due to the non-performance of the Demand Resource.

The DR Agreement shall reflect that it will be the DR Supplier's responsibility to reimburse Mon Power for any penalties, fees, or charges resulting from non-performance of its Demand Resource(s), and the DR Supplier's obligation to indemnify and hold Mon Power harmless against any claim, etc., arising from such non-performance. In the case of a DR Supplier who is a CSP, the DR Agreement will additionally set forth CSP's responsibility to reimburse Mon Power for any penalties, fees, or charges resulting from non-performance of any CSP Program Participant, and CSP's obligation to indemnify and hold Mon Power harmless against any claim, etc., arising from such CSP Program Participants' non-performance.

### **5.5 Evaluation Methodology**

CRA will identify for recommendation to Mon Power the Demand Resource Proposal or portfolio of Proposals that contribute to Mon Power's capacity needs on a qualification plus cost basis. First, CRA will evaluate whether Proposals offering Demand Resources meet the requirements of this Section 5 and provide complete details such that CRA is confident in the ability of the DR Supplier to deliver the Demand Resource(s).

Second, for Proposals that meet the above requirements, CRA will evaluate the proposed Acquisition Price in Section 5.4.1. If the evaluation shows that the proposed Acquisition Price is less than one-hundred twenty-five percent (125%) of an independently developed capacity price forecast in RPM during the same period, Proposal may be recommended. If the evaluation shows that the proposed Acquisition Price is greater than one-hundred twenty-five percent (125%) of independently developed capacity price forecast in RPM during the same period, a Proposal will be eliminated from consideration. Proposals will be rank ordered and recommended to Mon Power based on the same metric.

#### **5.6 Contract Execution**

Mon Power does not, by this RFP, obligate itself to purchase any Demand Resources, or to execute a DR Agreement with any Respondent who submits an offer to sell Demand Resources to Mon Power and Mon Power may, in its discretion, reject any or all Proposals to sell Demand Resources to Mon Power, as such are described in this RFP.

Selection of a winning Proposal shall not be construed as a commitment by Mon Power to execute the DR Agreement. Execution of any DR Agreement is contingent upon Mon Power receiving all required regulatory approvals and completion of such due diligence as Mon Power in its sole discretion determines is reasonable to confirm the qualifications and performance of a given Demand Resource. During the period between when CRA makes its recommendation(s) to Mon Power, and the date of execution of the DR Agreement, Mon Power may conduct additional due diligence on the Proposal.

#### **5.7 Demand Resource Proposal Fee**

There is no Proposal fee for DR Proposals. DR Suppliers should refer to Section 10.1 for credit support requirements for the submission of a Proposal and for execution of the DR Agreement.

### **6 Proposal Submission**

All Proposal documents must be submitted to the RFP Manager via email to [MonPower-RFPManager@crai.com](mailto:MonPower-RFPManager@crai.com).



## **6.1 Format and Documentation**

The primary application, including responses to all of the content requirements of Section 4, should be provided in Microsoft Word and Adobe Acrobat PDF file format.

An Information Form Addendum template is available on the RFP website in Microsoft Excel file format. This file allows for:

- standardized entry of economic, financial, and operating data necessary to perform the net present value analysis described in Section 4.2.3;
- standardized entry of proposal characteristics related to local economic impact, as necessary to perform the economic impact assessment described in 4.2.4.1; and
- cataloguing of other files associated with the Proposal, including file names and descriptions. Such files include permits, applications, approvals, and contractual arrangements.

All data related to economic, financial, and operating characteristics of a generation facility should be provided on a unit basis rather than for the plant as a whole (if a plant is made up of multiple units). Other data may be provided on an aggregated plant basis.

Respondents will maintain the order and format of the worksheets to facilitate CRA's review of the Proposal. The Information Form Addendum should be submitted in the same Microsoft Excel file format as provided in the template form.

Financial statements, annual reports, and other large documents may be referenced via a web site address. If possible, all such documents should be made available in Adobe Acrobat PDF file format.

## **6.2 Certification**

Each proposal should include the following statement, signed by an authorized representative of Respondent and notarized:

"I, \_\_\_\_\_ am an authorized representative of \_\_\_\_\_ ("Respondent") and hereby certify and affirm that: (i) I am authorized to obligate the Respondent to the terms of its Proposal; (ii) the Respondent's Proposal shall remain binding until May 4, 2017 or, if the Proposal is selected, until the transaction receives all necessary regulatory approvals; (iii) the Respondent agrees to all of the terms, conditions and requirements of this RFP; and (iv) neither Respondent nor any

person or entity acting or purporting to act on its behalf or with Respondent has entered into any combination, conspiracy, agreement or other form of collusive arrangement with any person, corporation, partnership or other entity, which directly or indirectly has to any extent lessened competition between the Respondent and any other person or entity for this RFP.”

## **7 Reservation of Rights**

Mon Power reserves the right, without qualification, to reject any or all Proposals and to waive any irregularity in submitted information. There is no assurance, express or implied, that any agreement will be executed pursuant to this RFP. Mon Power also reserves the right to solicit additional Proposals it deems necessary and the right to submit additional information requests to Respondents during the Proposal evaluation process.

This RFP shall not, by itself, give any right to any party for any claim against Mon Power. Furthermore, by submitting a Proposal, the Respondent shall be deemed to have acknowledged that Mon Power assumes no liability with respect to this RFP or any matters related thereto. Respondent acknowledges and agrees that Mon Power may terminate this RFP at any time and for its convenience without liability to Respondents, its advisors, consultants and agents. By submission of a Proposal, the Respondent, for itself as well as for its successors and assignees (if any), agrees that, as between Respondent and Mon Power, Respondent is to be solely responsible for all claims, demands, accounts, damages, costs, losses and expenses of whatsoever kind in law or equity, known or unknown, foreseen or unforeseeable, arising from or out of this RFP or its Proposal.

Mon Power reserves the right to modify this RFP for any reason and at any time. Such changes prior to bidding will be communicated to Respondents who submit a valid Intent to Bid Form.

## **8 Confidentiality of Information**

All Proposals submitted in response to this RFP become the responsibility of CRA upon submittal. Respondents should clearly identify each page of information considered to be confidential or proprietary. Consistent with the NDA, CRA will take reasonable precautions and use reasonable efforts to maintain the confidentiality of all information so identified. Mon Power reserves the right to release any Proposals, or portions thereof, to agents, attorneys or consultants for purposes of proposal evaluation. Regardless of the confidentiality claimed, however, and regardless of the provisions of this RFP, all such information may be subject to review by, and disclosable by Mon Power, to the

appropriate state authority, or any other governmental authority or judicial body with jurisdiction relating to these matters, and may also be subject to discovery by other parties.

## **9 Regulatory Approvals**

Pursuant to the terms of the Definitive Agreement(s), the Respondent will agree to use its reasonable best efforts, including, if necessary, providing data and testimony, to obtain any and all State, Federal, or other regulatory approvals required for the consummation of the transaction.

Please note in particular that approval by the PSC and FERC will be required before the transaction can be consummated between the selected Respondent and Mon Power.

## **10 Credit Qualification and Collateral**

CRA will evaluate the credit quality and related collateral posting requirements for each Respondent submitting a Proposal(s) for new generation facilities or Demand Resources, in accordance with a uniform and consistent application of Mon Power risk management practices and standards, in two phases: (i) as part of CRA's evaluation of a Respondent's qualification to submit a Proposal; and (ii) if a Respondent is selected, during the negotiation of the Definitive Agreement. A Respondent shall have the corresponding obligation to post collateral ("Initial Collateral") as determined in accordance with this Section 10.1, as part of its Proposal, and the obligation (if selected) to post collateral ("DA Collateral") at the execution of the Definitive Agreement. In each case, the Initial Collateral and the DA Agreement Collateral must be in the form of eligible collateral ("Eligible Collateral"), which for purposes of this RFP shall be either: (a) a letter of credit; or (b) cash, in each case as reasonably determined by CRA (during the qualification stage) and by CRA/Mon Power (during the Definitive Agreement negotiation stage). Respondents can find instructions for posting collateral on the RFP website. CRA and Mon Power reserve the right to require a Respondent to post DA Agreement Collateral in an amount that exceeds the Initial Collateral amount.

### **10.1 Initial Collateral Requirements**

In order to demonstrate its eligibility to submit a Proposal and to demonstrate credit quality, each Respondent shall be required to post Eligible Collateral along with the submission of the Proposal. The Eligible Collateral shall be determined on the basis of the type of Capacity Asset reflected in the Proposal and in the specified amounts below for each MW of Capacity Asset reflected below:

• <u>Capacity Asset</u>	<u>Eligible Collateral Amount</u>
• New Generation Facility <sup>13</sup>	\$53.68/kW of facility capacity
• Demand Resources	\$35.71/kW of demand reduction

The Initial Collateral shall remain in place until CRA and Mon Power have determined the amount of DA Collateral to be posted by the selected Respondent, and that DA Collateral is actually posted by the selected Respondent at the execution of the Definitive Agreement.

## **10.2 DA Collateral Requirements**

During the negotiation of the Definitive Agreement, CRA and Mon Power will determine the required form of DA Collateral a Respondent must satisfy at the execution of the Definitive Agreement. The DA Collateral to be posted will be dependent in part on the type of Capacity Asset reflected in the selected Respondent's Proposal as there are various potential risks and liabilities (a non-exhaustive list of which appear below) that CRA and Mon Power must assess in determining the amount of DA Collateral:

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<sup>13</sup> Existing generation facilities that are currently in commercial operation are not required to post collateral. However, existing generation resources that are not currently in commercial operation and would require additional investments to bring back into commercial operation, such as mothballed generation facilities, are required to post Eligible Collateral, which shall be calculated using the Eligible Collateral requirements for new generation facilities.

## **Capacity Asset**

## **Reason for Collateral Posting**

### **New Generation Facility**

To secure the Respondent's development efforts to satisfy interim milestones, establish consequences for failing to meet interim milestones, delay damages, final deadline for achieving commercial operation and possible step-in rights.

### **Demand Resource**

To protect Mon Power in the event that (a) the DR Supplier fails to provide the committed amount of demand reduction as required under the DR Agreement and Mon Power is required to acquire a replacement demand reduction resource at an incremental cost, or (b) the DR Supplier fails to reduce demand when called upon and Mon Power is assessed a penalty, charge, or fee by PJM for such nonperformance.

In the case of DA Collateral posted with respect to an existing generation facility or a new generation facility, the Respondent shall cease to be required to maintain the DA Collateral once the purchase of the generation facility is consummated. DA Collateral posted by a DR Supplier shall be maintained during the term of the DR Agreement.

## **11 Miscellaneous**

### **11.1 Non-Exclusive Nature of RFP**

Mon Power may procure more or less than the amount of Capacity Assets solicited in this RFP from one or more Respondents. Respondents are advised that any Definitive Agreement executed by Mon Power and any selected Respondent may not be an exclusive contract for the provision of Capacity Assets. In submitting a Proposal(s), Respondent will be deemed to have acknowledged that Mon Power may contract with others for the same or similar deliverables or may otherwise obtain the same or similar deliverables by other means and on different terms.

### **11.2 Information Provided in RFP**

The information provided in this RFP, or on Mon Power's RFP website, has been prepared to assist Respondents in evaluating this RFP. It does not purport to contain all the information that may be relevant to Respondent in satisfying its due diligence efforts. Mon Power makes no representation or warranty, express or implied, as to the accuracy, reliability or completeness of the information in this RFP, and shall not be liable for any representation, expressed or implied, in this RFP or any omissions from this RFP, or any information provided to a Respondent by any other source.

### **11.3 Proposal Costs**

Mon Power shall not reimburse Respondent and Respondent is responsible for any cost incurred in the preparation or submission of a Proposal(s), in negotiations for an agreement, and/or any other activity contemplated by the Proposal(s) submitted in connection with this RFP. The information provided in this RFP, or on Mon Power's RFP website, has been prepared to assist Respondents in evaluating this RFP. It does not purport to contain all the information that may be relevant to Respondent in satisfying its due diligence efforts.

### **11.4 Indemnity**

Supplementing Respondent's assumption of liability pursuant to this RFP, Respondent shall indemnify, hold harmless and defend Mon Power, and its officers, employees and agents, from any and all damages, liabilities, claims, expenses (including reasonable attorneys' fees), losses, judgments, proceedings or investigations incurred by, or asserted against, Mon Power or its officers, employees or agents, arising from, or are related to, this RFP, or the execution or performance of one or more Definitive Agreements.

### **11.5 Hold Harmless**

Respondent shall hold Mon Power harmless from all damages and costs, including, but not limited, to legal costs in connection with all claims, expenses, losses, proceedings or investigations that arise as a result of this RFP or the award of a proposal pursuant to the RFP or the execution or performance of a Definitive Agreement.

### **11.6 Further Assurances**

By submitting a Proposal, Respondent agrees, at its expense, to enter into additional agreements, and to provide additional information and documents, in either case as requested by CRA in order to facilitate: (a) the review of a

Proposal; (b) the execution of one or more Definitive Agreements; or (c) the procurement of regulatory approvals required for the effectiveness of one or more Definitive Agreements.

#### **11.7 Licenses and Permits**

Respondent shall obtain, at its cost and expense, all licenses and permits that may be required by any governmental body or agency necessary to conduct Respondent's business or to perform hereunder. Respondent's subcontractors, employees, agents and representatives of each in performance hereunder shall comply with all applicable governmental laws, ordinances, rules, regulations, orders and all other governmental requirements.

PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

Case No. 17-\_\_\_\_-E-\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of a Generation Resource  
Transaction and Related Relief

DIRECT TESTIMONY OF  
THOMAS SWEET

March 7, 2017



1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Thomas Sweet, and my business address is 400 Perimeter Center  
3 Terrace, Suite 500, Atlanta, GA 30346.

4

5 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

6 A. I am employed by ABB Inc. and my title is Director, Global Reference Case, Enterprise  
7 Software. My employment is devoted to the development and management of Global  
8 Power References Cases at ABB, which include the United States, Canada, Mexico,  
9 Europe and Asian/Pacific Regions.

10

11 Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL  
12 BACKGROUND.

13 A. I attended the University of Illinois, Urbana-Champaign where I graduated with a  
14 Bachelor of Science and a Master of Science degree in Electrical Engineering in 1980  
15 and 1981 respectively. I've also been a Registered Professional Engineer since 1990. I  
16 have been employed by ABB Inc. and its predecessor companies since 2000. In addition,  
17 I held positions as Project Engineer and Planning Engineer at Dynegy-Illinois Power  
18 from 1990 to 2000, Environmental Technical Specialist from 1987 to 1990 and Projects  
19 Coordinator and Engineer from 1981 to 1987.

20

1 Q. CAN YOU TELL US ABOUT ABB AS A COMPANY AND ITS CREDENTIALS IN  
2 FORECASTING AND IN THE POWER INDUSTRY?

3 A. ABB is a global leader in power and automation technologies that enable utility, industry,  
4 and transport and infrastructure customers to improve their performance while lowering  
5 environmental impact. The ABB Group of companies operates in roughly 100 countries,  
6 employs about 140,000 people, is headquartered in Zurich and has office locations  
7 around the globe.

8 The ABB Advisors team within the ABB Enterprise Software product group is a trusted  
9 advisor on power markets, energy fuels strategy, fuel fundamentals and energy portfolio  
10 risk and has helped its clients turn their energy markets strategies into actionable results.  
11 ABB electric and gas price forecasts and asset valuations are the standard of the industry  
12 because they have been street-tested in over \$30 billion in financing transactions covering  
13 more than 85,000 MW of energy projects worldwide since 1997. ABB Advisors have  
14 produced over 35 market reports and portfolio evaluations for both buyers and sellers of  
15 North American power plants from 2009 through 2015.

16  
17 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

18 A. The purpose of my testimony is to provide a general overview of the 2016 energy and  
19 capacity forecasts provided to Charles River Associates for its use in modeling the  
20 dispatch of various generation resources in order to conduct the net present value analysis

1 of the submitted bids as part of a Request for Proposal, and to address the methodology  
2 and the important specific components of that forecast.

3  
4 Q. DOES YOUR DIRECT TESTIMONY INCLUDE ANY ATTACHMENTS?

5 A. Yes, My testimony includes Exhibit TS-1 which are public and confidential versions of  
6 graphs I discussed above. Exhibit TS-1 was prepared and assembled under my direction  
7 and supervision.

8  
9 A. **The Forecast and Its Components**

10 Q. PLEASE DESCRIBE THE ENERGY FORECAST GENERALLY, INCLUDING EACH  
11 COMPONENT PART.

12 A. In the Spring and Fall of each year, ABB develops electricity, fuel, and environmental  
13 price forecasts for its North American Power Reference Case covering 73 market areas.  
14 ABB relies on a fundamentals-based integrated approach where market-based power  
15 forecasts, fuel, emission allowance, and renewable energy credit prices are internally  
16 consistent with one another in the model; that is: 1) natural gas and coal prices are  
17 internally consistent with the associated power sector consumption of each fuel; 2)  
18 capacity additions, retirements, and retrofits are internally consistent with the allowance  
19 and fuel prices; 3) electric energy and capacity prices are internally consistent with the  
20 capacity additions, allowances and fuel prices; and 4) renewable energy credit prices are

1 internally consistent with state renewable portfolio standards and electric energy and  
2 capacity.

3  
4 Q. PLEASE DESCRIBE THE NATURAL GAS PRICE FORECAST FOR PJM-APS.

5 A. ABB's model incorporates an aggregate view of the U.S. and Canadian natural gas  
6 sector. For each month and iteration, the model executes in the following manner:

- 7 • For each iteration, natural gas demand by the power sector is taken from the prior  
8 iteration of the Power Module.
- 9 • Canadian and Lower 48 U.S. residential, commercial, and industrial (RCI)  
10 demand forecasts are treated as exogenous inputs to the natural-gas sub module.  
11 RCI demand is forecast based on an analysis of RCI demand in the EIA Annual  
12 Energy Outlook (AEO) and the National Energy Board of Canada (NEBC) 25  
13 year outlook. ABB also conducts its own research and analysis of industrial  
14 demand based on publically available analysis of forecast industrial demand.  
15 Historical data from the ABB Velocity Suite product are used as a starting point  
16 for demand growth applied based on growth rates taken from EIA and NEBC  
17 forecast and to add monthly seasonal shape to annual forecasts.
- 18 • Imports and Exports of LNG as well as pipeline exports to Mexico (outside CA  
19 connected Baja California) are also treated as exogenous demand sources drawing  
20 on the combined Canadian and Lower 48 gas system. These forecasts are created  
21 based on analysis of: historical data for individual pipelines and import terminals,

1 individual pipeline and LNG export projects, projected supply and demand for  
2 global LNG, and projected demand for natural gas in Mexico. North American  
3 production is represented in the model by a series of Lower 48 and Canadian  
4 supply curves that relate production at a wellhead to the wellhead price of natural  
5 gas for each basin and geology in each year. Then, an annual production  
6 algorithm identifies the relative prices at each of the supply basins to the basin  
7 production necessary to meet annual gas demand. Regional storage is based upon  
8 a schedule of injections and withdrawals required to balance monthly demand and  
9 production. Then, monthly gas production, transportation and demand after  
10 storage are simulated within a gas network optimization model to provide both  
11 gas flows and prices at each point within the gas network. Prices at each point in  
12 the topology are determined based upon wellhead prices plus transportation costs.  
13 From this solution, the monthly Henry Hub price is identified directly from its  
14 geographic point within the gas network.

15 • The graphs presented in Exhibit TS-1 show the 2016 Fall Reference Case natural  
16 gas prices used in this analysis. These prices include a Henry Hub forecast, which  
17 is widely used as a national benchmark price for natural gas; the Dominion South  
18 forecast, which is the natural gas market center that affects delivered natural gas  
19 prices in the PJM-APS region; and the NG West Va forecast, which is the  
20 delivered natural gas price in the PJM-APS region.

1 Q. PLEASE DESCRIBE THE ENERGY PRICE FORECAST FOR PJM-APS.

2 A. ABB simulates the operation of each region of North America and develops energy  
3 forecast based on its proprietary PROMOD software. For each region, PROMOD  
4 considers: (a) individual power plant characteristics including heat rates, start-up costs,  
5 ramp rates, and other technical characteristics of plants; (b) transmission line  
6 interconnections, ratings, losses, and wheeling rates; (c) forecasts of resource additions  
7 and fuel costs over time; (d) forecasts of loads for each utility or load serving entity in the  
8 region; and (e) the cost and availability of fuels that supply the plants.

9 The software is an hourly chronological dispatch algorithm that minimizes costs (or bids)  
10 while simultaneously adhering to a wide variety of operating constraints, including  
11 generating unit characteristics, transmission limits, and customer demand. It performs an  
12 8760-hour commitment and dispatch recognizing both generation and transmission  
13 impacts and forecasts hourly energy prices in addition to unit generation, revenues and  
14 fuel consumption, and transmission flows.

15 Another output from the ABB Model includes the capacity price forecast. ABB's  
16 capacity price forecast is the residual amount required to keep the incremental resource  
17 "whole" after energy revenues are considered. Historically, we look at capacity price for  
18 marginal resources as a break-even price considering the cost of capital and the  
19 production and operating cost. Capacity prices are either driven by new economic builds  
20 or by the intersect of the demand curve multiplier multiplied by the cost of new entry  
21 (CONE), where CONE is the levelized cost of a new combustion turbine unit. If the

1 demand curve multiplier equals zero, the capacity revenue is based on the revenue  
2 required to keep the most economic retirement in the market.

3 The graphs presented in Exhibit TS-1 show the 2016 Fall Reference Case electricity  
4 prices and capacity prices used in this analysis. Three sets of electricity prices are shown  
5 that reflect the daily variability of electricity prices: On-Peak, which averages the hours  
6 between 7:00 AM and 10:00 PM, Monday through Friday; Off-Peak, which averages all  
7 other hours; and Average, which averages all hours.

8  
9 Q. DO YOU BELIEVE THE FORECAST TO BE AN ACCURATE REPRESENTATION  
10 OF FUTURE ENERGY PRICES?

11 A. Yes. ABB's energy forecast is developed using the PROMOD software, a proven data  
12 management and production simulation model, that incorporates extensive details in  
13 generating unit operating characteristics and constraints, transmission constraints,  
14 generation analysis, unit commitment/operating conditions, and market system operations  
15 to simulate the operation of each region of North America and produces accurate energy  
16 forecasts. Most of the simulation details are provided by ABB's Velocity Suite which is  
17 the energy industry's premier analytical source for information. Velocity Suite provides  
18 accurate and complete data sources, with advanced modeling used to fill gaps and correct  
19 inaccurate and missing data.

20

1 Q. DO OTHER CLIENTS UTILIZE YOUR SERVICES AND RELY ON YOUR  
2 FORECAST?

3 A. Yes, ABB's North American power Reference Case currently has approximately 100  
4 subscribers. Over 35 clients subscribe nationally, while the rest of the clients subscribe to  
5 regional Reference Cases. As noted, this forecast was used by Charles River Associates  
6 as part of its dispatch modeling of the proposals, which is a very common use for our  
7 forecast.

8  
9 Q. ARE THERE ANY OTHER ATTRIBUTES OF THE FORECAST YOU WISH TO  
10 DISCUSS?

11 A. ABB's model uses a Monte Carlo technique to simulate the uncertainty of generator  
12 availability. Each generator's availability is based on inputs for forced outage rate and  
13 mean time to repair. Using these inputs, the model will randomly determine "black out"  
14 dates during which the generator will not be available if called upon. Generators will  
15 initially be committed for a week assuming they will not experience a forced outage. If an  
16 outage occurs, the generator may be recommitted once it returns to service. A unique  
17 availability schedule for each generation resource is generated for each Monte Carlo  
18 "draw", and the entire simulation is repeated. The model will also adjust annual outages  
19 determined from the initial Monte Carlo draw process to match the input forced outage  
20 rate in order to achieve convergence with fewer draws.



1 Fossil-fired generators such as steam turbines, simple-cycle combustion turbines, and  
2 combined-cycle turbines are committed and dispatched based on operating costs and  
3 characteristics. Nuclear plants are modeled as must-run units that always operate at full  
4 available capacity. Hydro units may have both a minimum capacity or run-of-river  
5 portion and a peak-shaving capacity that is distributed to hours with the highest load  
6 levels. Non-dispatchable resources with established generation patterns such as wind  
7 farms and solar are modeled as must-take with on-peak/off-peak energy distributions or  
8 as an hourly profile. Load by zone or balancing authority includes an hourly shape with  
9 annual peak and energy forecasts. Interruptible loads are modeled as a dispatchable  
10 resource with an associated bid price. The transmission system is represented as a  
11 transportation model that captures the high level impacts of area-to-area (market zone or  
12 sub-zone) transmission constraints without requiring detailed bus-level transmission data  
13 and in-depth knowledge of the transmission system.

14 ABB model's unit commitment logic process starts with an initial unit commitment  
15 loading order for the week, and then performs a full hourly dispatch with zonal  
16 transmission for each hour of the week. It also considers operating reserve requirements  
17 in its commitment and dispatch algorithm. Checking for violations of minimum runtime  
18 and minimum downtime constraints on each unit, the logic looks for alternative  
19 commitment decisions that improve the economic performance of the system, and  
20 calculates bid adders to ensure that the cost of startup and minimum runtimes are taken

1           into account. Once the commitment schedule is determined, another full hourly dispatch  
2           is performed to produce the final results.

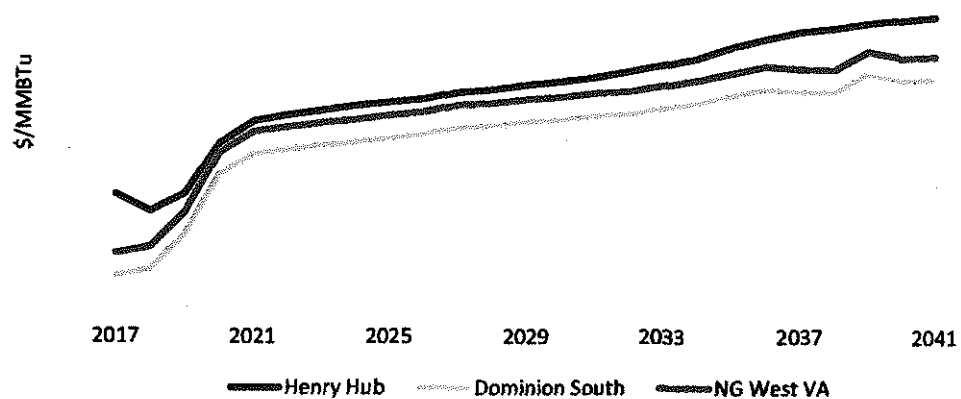
3

4    Q.     DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

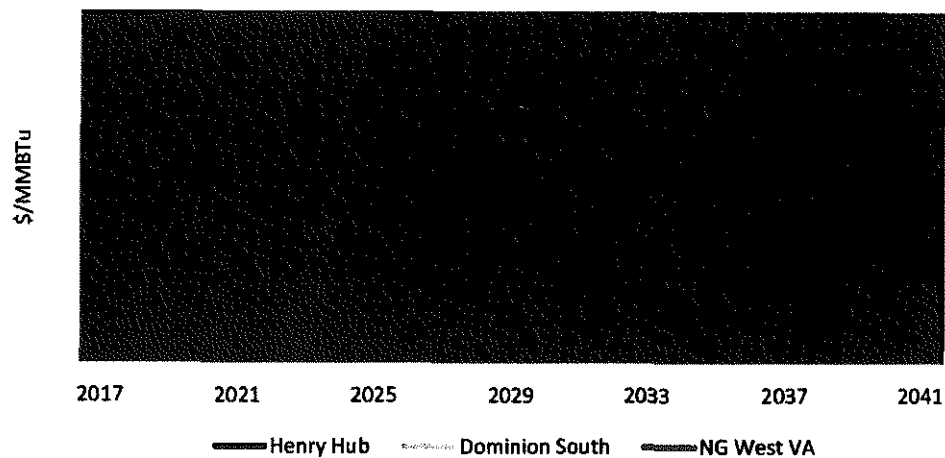
5    A.     Yes, it does.

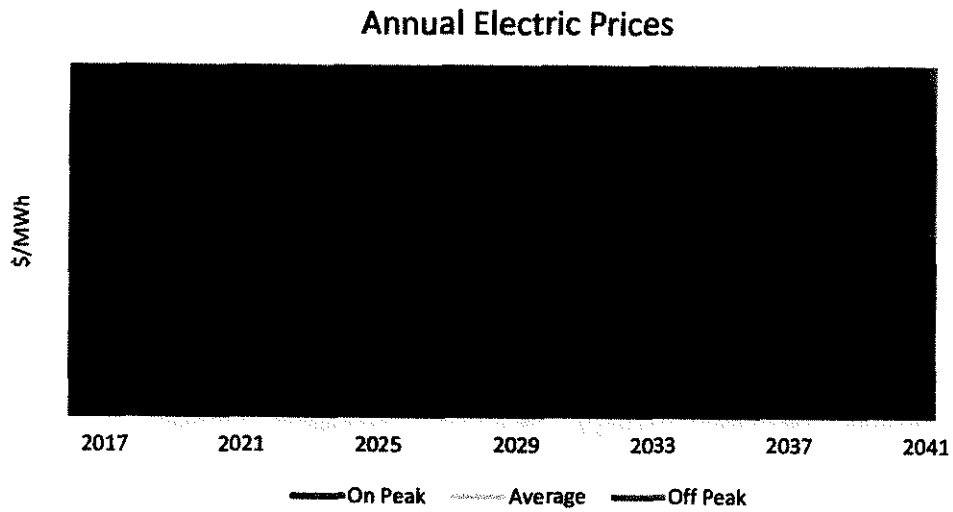
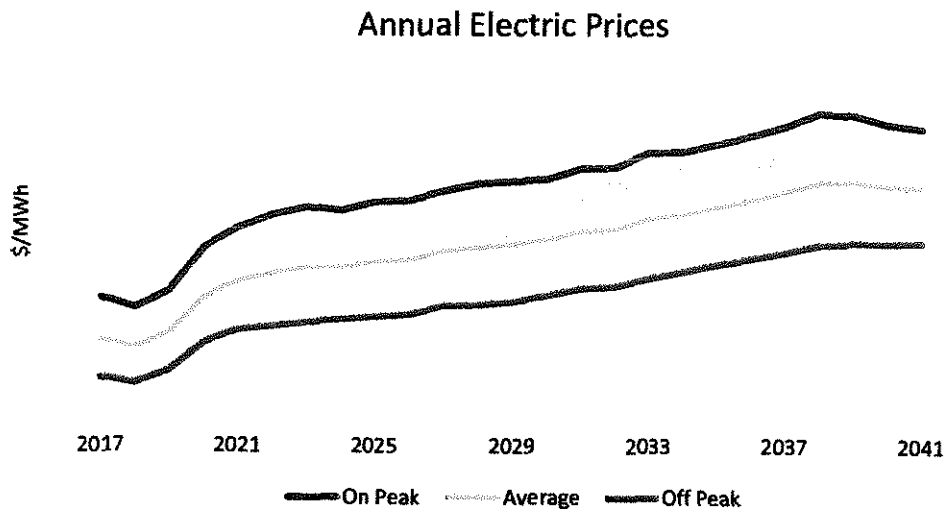
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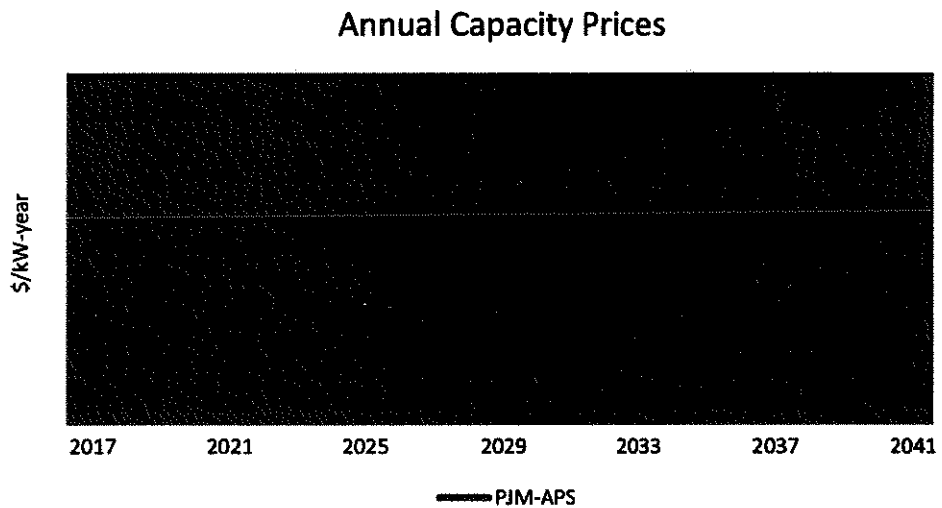
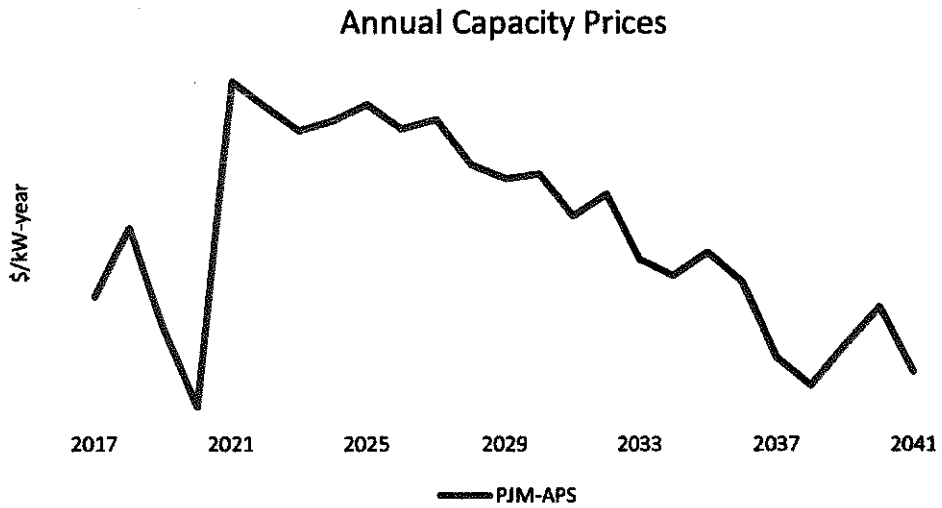
Annual Natural Gas Prices



Annual Natural Gas Prices







PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

Case No. 17-\_\_\_\_-E-\_\_\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of a Generation Resource  
Transaction and Related Relief

DIRECT TESTIMONY OF  
BRADLEY D. EBERTS

March 7, 2017

1 Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.

2 A. My name is Bradley ("Brad") D. Eberts and my business address is 76 South Main Street,  
3 Akron, Ohio 44308. I am the Manager of Load Forecasting for FirstEnergy Service  
4 Company.

5 Q. ON WHOSE BEHALF ARE YOU TESTIFYING TODAY?

6 A. I am testifying on behalf of Monongahela Power Company ("Mon Power") and The  
7 Potomac Edison Company ("PE," and together with Mon Power, the "Companies").  
8 Unless otherwise stated, my testimony applies to both Companies.

9 Q. WHAT IS YOUR PROFESSIONAL AND EDUCATIONAL BACKGROUND?

10 A. I graduated from the University of Akron with a Bachelor of Science degree in Electrical  
11 Engineering and I am a registered professional engineer in the State of Ohio. I joined  
12 Ohio Edison Company in June 1980 in its Rate Department. For the first 17 years of my  
13 career, I was responsible for various aspects of rate design, cost of service, load research,  
14 rate case support, electric fuel component, and forecasting. In 1998, I transferred to  
15 FirstEnergy Corp.'s ("FirstEnergy") unregulated affiliate, FirstEnergy Solutions Corp. I  
16 became a manager of the newly-formed back office for retail pricing. In 1999, I became  
17 a manager of The E Group, a newly formed consulting affiliate of FirstEnergy. I  
18 supervised its consultants who helped commercial and industrial customers manage their  
19 energy. In 2004, I assumed my current position as Manager of Load Forecasting in the  
20 Rates and Regulatory Affairs group of FirstEnergy Service Company.

1 Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS MANAGER OF LOAD  
2 FORECASTING FOR THE RATES AND REGULATORY GROUP?

3 A. I supervise a group which is responsible for all retail load and revenue forecasting for the  
4 Companies. This entails, among other things, preparing the Companies' load forecast in  
5 both the short and long term. This group is also responsible for the load forecast used in  
6 the Expanded Net Energy Cost and the Integrated Resource Plan ("IRP") filings with the  
7 Public Service Commission of West Virginia ("Commission") and for projecting the  
8 revenues associated with those forecasts for internal planning and external reporting  
9 purposes. In addition, my group is responsible for load research, data management, and  
10 cost allocation factors.

11 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

12 A. The purpose of my testimony is to provide the fifteen-year forecast (the 2017-2031 time  
13 period) of the Companies' load peak demand and energy requirements and the  
14 methodologies used to develop them. The forecast includes both a winter peak (the  
15 period the Companies' peak typically occurs) and a summer peak forecast.

16 Q. ARE YOU SPONSORING ANY EXHIBITS?

17 A. Yes, I am sponsoring two exhibits, which provide historical and forecasted load peak  
18 demand (Exhibit BDE-1) and energy requirements (Exhibit BDE-2) for the Companies.

19 Q. WERE THE FORECAST AND EXHIBITS PREPARED BY YOU OR UNDER YOUR  
20 DIRECT SUPERVISION?

21 A. Yes, they were.



1 Q. WHAT ARE YOUR FORECASTED PEAK DEMANDS AND ENERGY  
2 REQUIREMENTS FOR THE COMPANIES OVER THE FIFTEEN-YEAR PERIOD  
3 FROM 2017-2031?

4 A. Exhibit BDE-1 shows the three-year historical load peak demand for both winter and  
5 summer periods, along with a fifteen-year forecast. The winter peak in 2016/2017 was  
6 2,867 megawatts ("MW"). I forecast the Companies' winter peak to grow to 3,421 MW  
7 by 2020/2021 and to 3,752 MW by 2027/2028. The summer peak was 2,769 MW in  
8 2016. I forecast the summer peak to grow to 3,143 MW by 2020 and 3,508 MW by  
9 2027. These forecasted peak loads do not include the reserve margins, which are  
10 required by PJM Interconnection ("PJM") to offset forced outages in generation  
11 resources. Adjusted for the required reserve margins (16.6%), the forecasted winter peak  
12 is 3,988 MW in 2020/2021 and 4,375 MW in 2027/2028. Likewise, the forecasted  
13 summer peak adjusted for the required reserve margins is 3,665 MW in 2020 and 4,090  
14 MW in 2027.

15 Exhibit BDE-2 shows the three-year historical energy requirements, along with a  
16 fifteen-year forecast. The energy deliveries for 2016 were 15,129 gigawatt-hours  
17 ("GWh"). The forecasted energy requirements grow to 17,594 GWh by 2020 and to  
18 19,749 GWh by 2027.

1 Q. WHAT ARE THE MAIN COMPONENTS OF THE LOAD PEAK DEMAND  
2 FORECAST?

3 A. The two main components of the load peak demand forecast are: (1) the energy  
4 requirements forecast; and (2) weather on the peak day at the peak hour and the three  
5 hours prior to the peak hour.

6 Q. WHY IS THE ENERGY REQUIREMENTS FORECAST IMPORTANT TO THE  
7 PEAK DEMAND FORECAST?

8 A. The energy requirements forecast is important to the peak demand models for two  
9 reasons. First, the Companies' peak demand is highly correlated with its energy sales.  
10 The higher the energy sales, the higher the demand. Second, an energy forecast enables  
11 us to incorporate economic data into the peak demand forecast. Unlike peak demands,  
12 energy sales are known by customer class, and can be forecasted with economic data by  
13 class. If we first develop an energy requirements forecast by customer class with class-  
14 specific economic data, we can then use the energy forecast to develop a peak demand  
15 forecast that captures economic data.

16 Q. HOW WERE THE ENERGY REQUIREMENTS FORECASTS DEVELOPED?

17 A. The energy requirements forecasts were developed for four customer classes: residential,  
18 commercial, industrial, and street and traffic lighting. For the residential, commercial  
19 and industrial classes, the Companies used ITRON's MetrixND® software models. The  
20 street and traffic lighting forecast was based on the recent amount of installed lights.

21

1 Q. PLEASE DESCRIBE ITRON's METRIXND® SOFTWARE.

2 A. ITRON's MetrixND® is a software tool that organizes the inputs, develops the forecast,  
3 provides statistics about the models, and organizes the output. Further, ITRON's  
4 MetrixND® is an industry-leading software application specifically designed for  
5 forecasting electric and gas sales, energy, and demand. MetrixND®, first released in  
6 1997, is used by more than 160 utilities, independent system operators ("ISOs"),  
7 regulators, municipalities, cooperatives, and energy retailers. MetrixND® users include  
8 companies and organizations from North America, Europe, Australia, and Asia. For the  
9 residential and commercial classes, the Companies used ITRON's MetrixND®  
10 Statistically Adjusted End-Use ("SAE") regression models. These models take into  
11 account end-uses (e.g., heating, air conditioning, water heating, and lighting) and their  
12 improved efficiencies. The Companies modeled the industrial class by segment rather  
13 than end-use, as described later in my testimony. MetrixND® is also used for the peak  
14 demand forecasts.

15 Q. WHAT ECONOMIC INPUT DATA WAS USED IN THE ENERGY REQUIREMENTS  
16 FORECAST?

17 A. West Virginia University's Bureau of Business and Economic Research from the  
18 Department of Economics in the College of Business and Economics ("WVU") provided  
19 historical economic data and economic growth forecasts that were used as inputs into the  
20 software models. The expected rate of economic growth in a given service territory is a  
21 key component for any load forecast since it has a direct and material impact on energy

1 consumption. The economic growth forecast is described in the testimony of Dr.  
2 Deskins.

3 Q. HAS WVU PROVIDED THE ECONOMIC INPUT DATA FOR THE FORECAST IN  
4 THE PAST?

5 A. This is the first time the Companies have used WVU's economic input data. Prior to this  
6 forecast, the Companies used Moody's Analytics as the economic consultant for the load  
7 forecast. The WVU Bureau of Business and Economic Research's primary focus is on  
8 economic forecasts in West Virginia, and consequently have in-depth knowledge of West  
9 Virginia state, region and county level economic activity. They released their 2017 West  
10 Virginia Economic Outlook report on October 4, 2016, and already had 20-year models  
11 and data available to develop the Companies' West Virginia territory economic forecasts.  
12 The Companies attended two public West Virginia Economic Outlook Conferences held  
13 by WVU in October, and met with Dr. Deskins and his staff in December to gain specific  
14 information about their outlook for the economy in the Companies' West Virginia  
15 territory.

16 Q. DID THE ENERGY FORECAST INCLUDE ASSUMPTIONS REGARDING  
17 WEATHER?

18 A. Yes. The residential and commercial energy forecasts used normalized weather.  
19 Normalized weather is the most recent 20 year average heating degree days ("HDD") and  
20 cooling degree days ("CDD") by month. Weather is not used as an input to forecast the

1 industrial and lighting classes. These classes do vary slightly by month but the weather is  
2 not a significant driver.

3 Q. HOW DID THE MODEL FOR FORECASTING ENERGY REQUIREMENTS TAKE  
4 INTO ACCOUNT END-USES FOR RESIDENTIAL CUSTOMERS AND THEIR  
5 IMPROVED EFFICIENCIES?

6 A. The residential SAE energy model is separated into three categories: heating load,  
7 cooling load, and other load. The separation between the end-uses is based on the  
8 Companies' appliance saturation surveys. Each category's forecast is developed using  
9 WVU's economic forecasts, the U.S. Energy Information Administration's ("EIA")  
10 regional appliance saturation forecast, and EIA's regional energy efficiency  
11 improvements. In addition, the heating load and cooling load forecasts used normalized  
12 HDD and CDD, respectively. The model's output is the forecasted average use per  
13 customer. The average use per customer is then multiplied by the forecasted number of  
14 customers to develop the residential customer kilowatt-hour ("kWh") energy forecast.  
15 The Companies adjust the kWh energy forecast for Energy Efficiency and Conservation  
16 ("EEC") programs sponsored by each Company, customer-owned distributed generation,  
17 and plug-in electric vehicles.

1 Q. HOW DID THE MODEL FOR FORECASTING ENERGY REQUIREMENTS TAKE  
2 INTO ACCOUNT END-USES FOR COMMERCIAL CUSTOMERS AND THEIR  
3 IMPROVED EFFICIENCIES?

4 A. The commercial SAE energy model is also separated into three categories: heating load,  
5 cooling load, and other load. Each category's forecast is developed using WVU's  
6 economic forecasts, EIA's regional end-use forecast, and EIA's regional energy  
7 efficiency improvements. In addition, the heating load and cooling load forecasts use  
8 normalized HDD and CDD, respectively. The model's output is the total commercial  
9 class kWh energy forecast. The Companies adjust the forecast for EEC programs,  
10 customer-owned distributed generation, and plug-in electric vehicles.

11 Q. PLEASE DESCRIBE THE MODELING OF THE INDUSTRIAL CLASS ENERGY  
12 REQUIREMENTS FORECAST BY SEGMENT.

13 A. As I mentioned earlier, industrial class energy requirements forecasts are modeled by  
14 segment rather than end-use. The manufacturing segments that are forecasted separately  
15 include chemical, coal, fabricated metals, food and beverage, primary metals,  
16 nonmetallic, shale gas, and wood products and furniture. Each segment's energy  
17 requirements forecast used WVU's economic forecasts as model inputs. The Companies  
18 adjusted the forecasts for information from their Customer Support representatives and  
19 EEC programs.

20

1 Q. DO THE COMPANIES CONSIDER CUSTOMER INPUT INTO ITS FORECAST?

2 A. Yes. The Companies' regional Customer Support representatives meet with customers to  
3 discuss future expansions, slowdowns, closings, and new facilities. These meetings are  
4 to assure the Companies have the proper facilities in place to provide service to  
5 customers and meet the energy demand that will be placed on the system.

6 Q. HOW DOES THIS CUSTOMER INFORMATION IMPACT THE ENERGY  
7 FORECAST?

8 A. The Companies' Customer Support representatives then make projections for each  
9 facility for items such as start date, demand, energy, ramp up period, shutdown, and ramp  
10 down period, and provide this information to the Load Forecasting group. Load  
11 Forecasting compares its model results to the region's customer specific projections.  
12 Load Forecasting then decides whether or not it needs to adjust its model results to  
13 capture the region's projections.

14 Q. DID THE COMPANIES MAKE ANY ADJUSTMENTS TO THE INDUSTRIAL  
15 ENERGY FORECAST BASED ON THE COMPANIES' CUSTOMER SUPPORT  
16 REPRESENTATIVES' PROJECTIONS?

17 A. Yes. The Companies made adjustments for shale gas growth, two mine expansions, and  
18 for two other new industrial plants in their service territories. These growth areas are  
19 discussed in the WVU Economic Outlook in Dr. Deskins' direct testimony, but limited  
20 history of the models' drivers does not capture the full energy impact from what  
21 customers are building and planning based on applications received by and discussions

1 with the Companies. To capture this additional information, the Companies made  
2 adjustments to their forecast model results.

3 Q. PLEASE EXPLAIN WHY SHALE GAS GROWTH HAS SUCH AN IMPACT ON  
4 LOAD AND ENERGY FORECASTS.

5 A. The shale gas industry's midstream sector, which includes gathering facilities,  
6 compressor stations, and processing plants, is energy intensive and has seen large energy  
7 and demand growth over the past few years. From 2012 through 2016, midstream plants  
8 added over 1,100,000 megawatt-hours ("MWh"), or 19% to the Companies' 2016  
9 industrial sales. These plants added approximately 140 MW (5%) to the December 2016  
10 peak. The heart of the shale gas industry growth in West Virginia is in Mon Power's  
11 service territory encompassing Doddridge, Ritchie, Wood, Harrison, Marion, Wetzel,  
12 Tyler, Monongalia, Gilmer, Brooke, and Hancock counties.

13 Q. DOES YOUR FORECAST INCLUDE ANY ADJUSTMENTS FOR AN ETHANE  
14 CRACKER PLANT IN THE PARKERSBURG OR OTHER AREA?

15 A. No. While ethane cracker plants, which typically each have very large energy  
16 consumption and demand between 100-150 MW, are under active consideration to be  
17 built, due to the current uncertainty of those plants in Mon Power's service territory, the  
18 Companies have not included those potential plants in their forecasts. Further, the  
19 forecast does not include any additional economic load growth stemming from such a  
20 plant.



1 Q. DOES YOUR FORECAST INCLUDE ALL POTENTIAL INDIVIDUAL PLANTS OR  
2 DEVELOPMENTS?

3 A. No. While there are a number of developments and/or plants under consideration in the  
4 eastern West Virginia Panhandle, Morgantown, Bridgeport, along the Ohio River in the  
5 northern West Virginia Panhandle, and at a few other possible locations, these plants are  
6 either not large enough nor certain enough to include them as load adjustments to the  
7 forecast.

8 Q. PLEASE EXPLAIN HOW YOUR ENERGY FORECAST INFLUENCES THE PEAK  
9 DEMAND FORECAST?

10 A. As I mentioned earlier, the energy forecast is the first main component of the peak  
11 demand forecast. The energy forecast, along with weather normalized historical kWh,  
12 are converted to a 12-month rolling sum. The purpose of this is to eliminate any short-  
13 term monthly effects and emphasize the long-term relationship between energy  
14 consumption and peak demand. This 12-month rolling sum energy forecast is then used  
15 as an input into the peak demand forecast regression model. Consequently, the peak  
16 demand forecast follows the energy forecast.

17 Q. PLEASE EXPLAIN HOW WEATHER INFLUENCES THE PEAK DEMAND  
18 FORECAST.

19 A. As I mentioned earlier, weather is the second main component of the peak demand  
20 forecast. Extreme weather for a given hour and for a few hours before the system peak  
21 generally drives the peak demands. The Companies therefore used historical weather

1 data at the time of the system peak and a few hours before the peak to develop  
2 normalized weather temperatures. Historical weather is based on data from 1994 through  
3 2016. The average temperatures during the peak hour and the three prior hours are used  
4 to develop the forecasted peak demands.

5 Q. WHAT IS THE ANNUAL PERCENTAGE WINTER PEAK DEMAND GROWTH  
6 YOU FORECAST FOR THE COMPANIES' SERVICE TERRITORIES BETWEEN  
7 NOW AND 2027 AND NOW AND 2031?

8 A. The winter peak demand compound annual growth rate from 2016 to 2027 is 2.5%. The  
9 winter peak demand compound annual growth rate from 2016 to 2031 is 2.0%.

10 Q. WHAT ARE THE MAJOR DIFFERENCES IN FORECAST DRIVERS USED IN THE  
11 2015 IRP FORECAST AND THIS FORECAST?

12 A. The forecasted 2020 peak from the 2015 IRP is 3,342 MW. This forecast's 2020 peak is  
13 3,426 MW. The forecasted 2027 peak from the 2015 IRP is 3,403 MW. This forecast's  
14 2027 peak is 3,760 MW. The major differences in forecast drivers used in the 2015 IRP  
15 forecast of peak demands and this forecast are as follows:

- 16 • The Companies used Moody's Analytics economic forecast for its 2015 IRP  
17 filing. The Companies utilized WVU's economic forecast for this forecast.
- 18 • The 2015 IRP did not specifically forecast the shale sector separately. The  
19 Companies now separately model the shale sector to provide better clarity of this  
20 sector's energy forecast.

- 1           • Both forecasts included midstream shale project adjustments based on  
2           information provided by the Companies' Customer Support representatives.  
3           Since the IRP forecast was developed, one project was indefinitely delayed and  
4           was not included in this forecast. Four projects have a similar magnitude but have  
5           a later start date and remain in the forecast but with the later date. One project is  
6           on track with additional load expected and built into the forecast. Two projects  
7           were delayed to a later start but are now projected to have higher load than  
8           originally forecasted. These changes are included in the forecast. Two new  
9           projects have been added to this forecast.
- 10          • The 2015 IRP included an ethane cracker plant in the forecast. As mentioned  
11          above, this forecast does not include an ethane cracker plant or any other  
12          downstream plant.
- 13          • There are two additional manufacturing plants in the eastern panhandle that have  
14          been added to this forecast.
- 15          • Since the 2015 IRP, coal and primary metals energy sales have dropped. While  
16          coal is expected to partially recover, primary metals are forecasted to remain at  
17          about their current levels. Because coal and primary metal energy forecasts are  
18          lower than the 2015 IRP forecast, these lower energy requirements would produce  
19          a lower peak demand forecast, all else equal.
- 20          • This forecast utilized the updated EIA's regional appliance saturation forecast and  
21          regional energy efficiency improvements.

- This forecast assumes the PJM winter definition. The PJM year starts in June and ends in May of the following year. The PJM winter season starts in December and ends in February of the following year rather than January, February, and December of a calendar year. This would be consistent with how PJM labels its winter peaks.

The net effect of the above mentioned drivers results in higher MW peaks as compared to the 2015 IRP.

Q. HOW DOES YOUR WEST VIRGINIA FORECAST COMPARE TO PJM'S FORECAST FOR THE APS ZONE?

A. PJM's forecast for the APS zone includes West Penn Power (Pennsylvania), The Potomac Edison Company (West Virginia, Maryland, and Virginia), and Mon Power (West Virginia, excluding the area known as West Virginia Power territory). By contrast, my forecast is specialized and focused for West Virginia since it includes Mon Power (including the West Virginia Power territory) and the West Virginia portion of PE. The West Virginia Companies' energy requirements are about 35% of the APS zone that PJM is forecasting. Aside from the dissimilar forecasting areas between PJM and my forecast, which in and of itself makes my forecast a better barometer with regard to West Virginia, other improvements are as follows:

- The PJM forecast assumed the Clean Power Plan equipment indexes reflecting the 2016 update of ITRON's end-use data. The Companies assumed no Clean Power Plan equipment indexes.

1           • PJM adjusted its APS zone to account for accelerating load related to natural gas  
2           processing plants. The Companies made similar adjustments that I mentioned  
3           above based on information from the Companies' Customer Support  
4           representatives.

5           • PJM only adjusts for large load changes for the entire zone. The Companies  
6           make load adjustments not captured in the model results for each Company (e.g.,  
7           Mon Power and PE). In general, PJM makes adjustments if it is material to the  
8           APS Zone, whereas I make adjustments if it is material to Mon Power or PE.

9           • PJM forecasted distributed solar generation adjustments to their APS summer  
10          peak of 89 MW, 154 MW and 319 MW for 2021, 2026, and 2031, respectively.  
11          The West Virginia portion of the PJM solar forecast was only 8 MW in 2031.  
12          Likewise, the Companies' solar generation forecast is the same --- 8 MW for the  
13          West Virginia territory in 2031.

14   • PJM does not include any adjustment for the EEC programs sponsored by each  
15   Company. As mentioned earlier, the Companies' forecasts accounted for savings from  
16   those programs.

17 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

18 A. Yes, it does.

## Exhibit BDE-1

Description	PJM Year (June-May)	"Year"	Peak Demands (MW)		Peak Demands (MW) Plus Reserve Margin *	
			Summer	Winter	Summer	Winter
Actual	2014/2015	2014	2,516	3,147	2,933	3,670
	2015/2016	2015	2,614	2,890	3,047	3,370
	2016/2017	2016	2,769	2,867	3,229	3,342
Forecast	2017/2018	2017	2,733	2,993	3,186	3,490
	2018/2019	2018	2,898	3,147	3,379	3,670
	2019/2020	2019	2,997	3,286	3,495	3,831
	2020/2021	2020	3,143	3,421	3,665	3,988
	2021/2022	2021	3,281	3,543	3,826	4,131
	2022/2023	2022	3,347	3,588	3,903	4,184
	2023/2024	2023	3,382	3,621	3,943	4,222
	2024/2025	2024	3,412	3,653	3,979	4,259
	2025/2026	2025	3,441	3,686	4,012	4,298
	2026/2027	2026	3,476	3,721	4,053	4,339
	2027/2028	2027	3,508	3,752	4,090	4,375
	2028/2029	2028	3,535	3,779	4,122	4,406
	2029/2030	2029	3,559	3,799	4,150	4,429
	2030/2031	2030	3,574	3,815	4,168	4,448
	2031/2032	2031	3,591	3,833	4,187	4,469
Compound Annual Growth Rate		2016 vs 2027	2.2%	2.5%	2.2%	2.5%
		2016 vs 2031	1.7%	2.0%	1.7%	2.0%

16.6% \*PJM 2016 Reserve Requirement Study Page 14 Table I-2

Exhibit BDE-2

Description	Year	Energy Requirements (MWh)				
		Residential	Commercial	Industrial	Public Highway Lighting	Total
Actual	2014	5,714,782	3,691,552	5,590,081	27,660	15,024,075
	2015	5,518,594	3,685,654	5,791,433	28,260	15,023,941
	2016	5,565,435	3,720,307	5,816,232	26,953	15,128,928
Forecast	2017	5,571,650	3,703,289	6,094,636	27,280	15,396,855
	2018	5,587,168	3,732,465	6,830,661	27,222	16,177,516
	2019	5,639,591	3,773,591	7,294,728	27,165	16,735,075
	2020	5,631,875	3,797,141	8,137,412	27,109	17,593,537
	2021	5,618,307	3,806,435	8,955,456	27,056	18,407,254
	2022	5,617,563	3,815,197	9,343,903	27,002	18,803,665
	2023	5,630,863	3,825,957	9,527,592	26,948	19,011,360
	2024	5,646,822	3,840,538	9,680,164	26,894	19,194,419
	2025	5,654,088	3,851,256	9,830,170	26,840	19,362,354
	2026	5,667,023	3,863,699	10,007,230	26,786	19,564,738
	2027	5,684,886	3,875,860	10,161,421	26,732	19,748,899
	2028	5,703,317	3,886,833	10,290,101	26,679	19,906,930
	2029	5,721,238	3,894,638	10,401,167	26,626	20,043,669
	2030	5,725,513	3,888,588	10,489,320	26,573	20,129,995
	2031	5,735,557	3,888,011	10,577,120	26,520	20,227,209
Compound Annual Growth Rate	2016 vs 2027	0.2%	0.4%	5.2%	-0.1%	2.5%
	2016 vs 2031	0.2%	0.3%	4.1%	-0.1%	2.0%

PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

Case No. 17-\_\_\_\_-E-\_\_\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of a Generation Resource  
Transaction and Related Relief

DIRECT TESTIMONY OF  
JOHN DESKINS

March 7, 2017



1 Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.

2 A. My name is John Deskins and my business address is 1601 University Avenue, Office  
3 256, Morgantown, West Virginia 26506. I am the Director of the Bureau of Business and  
4 Economic Research ("BBER") and Associate Professor in the Department of Economics,  
5 both in the West Virginia University ("WVU") College of Business and Economics.

6 Q. ON WHOSE BEHALF ARE YOU TESTIFYING TODAY?

7 A. I am testifying on behalf of Monongahela Power Company ("Mon Power") and The  
8 Potomac Edison Company ("PE," and together with Mon Power, the "Companies").  
9 Unless otherwise stated, my testimony applies equally to both Companies.

10 Q. WHAT IS YOUR PROFESSIONAL AND EDUCATIONAL BACKGROUND?

11 A. I graduated from Emory & Henry College with a Bachelor of Arts in economics and a  
12 Bachelor of Science in management. I graduated from The University of Tennessee with  
13 a Ph.D. in Economics. I served on the economics faculty at Creighton University from  
14 2005 through 2013 and I have served at WVU in the above-referenced capacity since  
15 2013.

16 Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS DIRECTOR OF THE BBER.

17 A. I lead the efforts of the BBER in providing economic forecasting and applied economics  
18 research for business, government, and community groups in West Virginia ("WV"). In  
19 this capacity I have testified before the West Virginia Legislature five times and I have  
20 testified before the United States House of Representatives and the United States Senate.  
21 I have delivered the state economic outlook before a joint session of the West Virginia

1           Legislature four times. I have published 15 articles in professional economics journals  
2           and I have published dozens of applied research studies on the West Virginia economy. I  
3           have served as principal investigator or co-principal investigator on funded research  
4           projects totaling more than \$1 million.

5   Q.    WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

6   A.    The purpose of my testimony is to provide historical and a 15-year economic forecast  
7           (the 2016-2031 time period) for the Companies' West Virginia service territory, to be  
8           used for modeling their load and energy forecast. An economic forecast is a key  
9           indicator in forecasting electrical usage. I also explain the methodology and rationale  
10          behind that forecast. Second, I will address the economic impact to the local, regional  
11          and state economies of the generation resource selected by the Companies as a result of a  
12          Request for Proposal to purchase and operate generation to serve their customers.

13   Q.    ARE YOU SUPPORTING ANY EXHIBITS?

14   A.    Yes, Exhibit JD-1, shows the economic inputs produced by the BBER for use by the  
15          Companies. Exhibit JD-2 is a map of the Companies' service territory in West Virginia.  
16          Exhibit JD-3 is an estimate of the economic impact of the Pleasants Power Station on the  
17          West Virginia economy for 2015.

18   Q.    WERE THE FORECAST AND EXHIBITS PREPARED BY YOU OR UNDER YOUR  
19          DIRECT SUPERVISION?

20   A.    Yes, they were.

**15-Year Economic Forecast**

Q. WHAT MODEL DID YOU USE FOR YOUR ECONOMIC FORECASTS?

A. I used the WV Economic Outlook Model, which has been the basis of the BBER's economic forecasting capabilities for more than 20 years, including four years in which I have directly managed the BBER.

Q. HOW DOES THE WV ECONOMIC OUTLOOK MODEL WORK?

A. The WV Economic Outlook Model is a comprehensive state-level econometric model that begins with a series of equations corresponding to key economic and demographic measures for the state as a whole and its 55 counties. Each individual equation expresses how historical changes in the broader U.S. economy, as well as any past structural changes in the West Virginia (or individual county's) economy, affect the overall economy and for some particular measures, such as coal industry employment, affect it as well over time.

The WV Economic Outlook model consists of 121 equations that directly characterize relationships for measures of employment, wages and real output by detailed industry, income by source (wages and salaries, transfer payments, etc.), population migration flows, construction sector activity and labor market status.

After this process is completed, these equations are then combined with a series of identities and other equations into a model totaling more than 800 equations that uses statistical algorithms to forecast each successive quarter in a recursive manner based upon the statistical relationships that were estimated using historical data. This process is

1 repeated iteratively for each quarter until the full model solves to the specified end point  
2 (fourth quarter of 2031).

3 Q. WHAT SOFTWARE DID YOU USE FOR YOUR MODEL?

4 A. I conducted the estimation and forecast using the EViews® software platform. EViews®  
5 is a nationally-recognized statistical analysis software provided by IHS Global Inc. that  
6 can be used in a wide-variety of circumstances to estimate time series or cross-sectional  
7 models as well as to create forecast models. EViews® users include a wide array of users  
8 in the private sector and at all levels of the public sector. My team members and I have  
9 more than 18 years using this software for producing forecasts and related analysis.

10 Q. WHAT INPUTS DID YOU USE IN MODELING YOUR ECONOMIC FORECAST?

11 A. Exhibit JD-1 contains the full historical and forecast estimates for economic and  
12 demographic variables available for each of the Companies' service territories. The  
13 series listed include physical production of coal and natural gas, employment and gross  
14 domestic product for specific industrial sectors or sub-sectors, population, households,  
15 labor force, housing starts and income levels. Other U.S.-level data relating to various  
16 measures of price levels have also been provided in the exhibit. Each individual series is  
17 presented on a monthly basis beginning in January 1991 and ends in December 2031.

18 Q. DO YOU MAKE FURTHER ADJUSTMENTS TO THE MODEL'S OUTPUTS IN  
19 DEVELOPING THE RESULTS OF YOUR STUDY?

20 A. Yes. Once the state forecast results have been finalized, these estimates are then used,  
21 along with any other variables that might be necessary, to explain changes in economic

1 and demographic variables for each of the state's 55 counties. In addition, recognizing  
2 the economic linkages present between a county and its neighbors, especially larger ones,  
3 equations will often incorporate changes in a variable for adjacent counties as a factor  
4 that explains a county's historical performance.

5 Q. HOW DID YOUR ANALYSIS DEVELOP FORECASTS FOCUSING ON THE  
6 COMPANIES' SERVICE TERRITORIES?

7 A. When constructing the county forecasts, the BBER breaks the state down into several  
8 regions based upon the economic and geographic connectedness of a given group of  
9 counties. Exhibit JD-2 illustrates all of the particular economic regions the BBER has  
10 identified and used in various publications, and the historical and forecast estimates  
11 attributed to these regions are a function of each county that makes up the region. For  
12 example, historical and forecast data presented for the southern coalfields are a sum of  
13 data for Lincoln, Logan, McDowell, Mingo and Wyoming counties, while the Greater  
14 Metro Valley includes Boone, Calhoun, Clay, Kanawha, Putnam, Mason, Roane, Cabell  
15 and Wayne counties.

16 Using the historical and forecast estimates attributed to these regions, we can  
17 develop results focused on the service territories where the Companies operate. For  
18 instance, the Mon Power territory is made up of several combined economic regions, but  
19 most of the activity is affected by the Natural Gas Boom and North Central WV regions.  
20 PE activity is a combination of the Potomac Highlands and Eastern Panhandle regions. A  
21 second example of tailoring results to the service territories includes the offering of more

1 detailed economic data that might only be available at the state level. Employment or  
2 output data for specific sectors or subsectors in a county/region that affect electricity use  
3 might not be available in many cases due to confidentiality restrictions set forth by data  
4 providers. Providers are companies who we meet with to get specific employment and  
5 output data that is used in our forecast. Estimates can be presented as long as the original  
6 non-disclosed data cannot be reverse-engineered.

7 Q. HAVE YOU DONE THIS TYPE OF ANALYSIS FOR OTHER ENTITIES?

8 A. Yes. Examples of previous forecast projects that the BBER has performed include our  
9 annual series of WV Economic Outlook reports for the state as a whole and reports for  
10 the North Central Region, Eastern Panhandle, New River Gorge and the Wheeling Area.  
11 In addition, the BBER also conducts an annual long-term forecast of coal production for  
12 West Virginia's northern and southern producing regions. Each of these reports are  
13 widely cited in various media outlets and also help to inform West Virginia's legislative  
14 and executive branches when formulating budget policy changes.

15 Q. WHAT ARE THE RESULTS OF YOUR STUDY?

16 A. The results indicate that over the 2016-2031 time period, economic progress will be more  
17 optimistic for most counties served by the Companies than for West Virginia as a whole.  
18 This is the result of the healthier state of their underlying economic and demographic  
19 fundamentals at present and the growth in employment, industrial output and population  
20 (for certain areas) that is forecast through 2031. While total employment across West  
21 Virginia is expected to increase at an average annual rate of nearly 0.3 percent,

1 employment in the Companies' service territories is expected to increase at an average  
2 annual rate of 0.4 percent.

3 The Companies' service territories will be buoyed by segments of the state's  
4 economy that should see sustained growth during the next 15 years. These include the  
5 natural gas industry, as continued development of the Marcellus and Utica Shale create  
6 growth opportunities throughout the state, particularly in the Northern Panhandle and  
7 portions of the North Central Region. The North Central Region's economy should also  
8 experience relatively steady growth over the course of the outlook period thanks to its  
9 relatively diverse economic base, pool of skilled and educated labor as well as  
10 infrastructure improvements that open access to commercial and industrial development.  
11 The state's Eastern Panhandle Region is also expected to realize a stronger pace of  
12 growth compared to the state average as it is connected to the highly-developed Greater  
13 Washington D.C. area's economy, and also enjoys healthy population growth thanks to  
14 net in-migration of people from higher cost-of-living areas in neighboring Maryland and  
15 Virginia. A major addition to the region is the current construction of a \$500 million  
16 manufacturing and distribution facility for Procter & Gamble in Berkeley County, which  
17 is projected to eventually employ 700 workers along with potentially additional ancillary  
18 employment given that additional suppliers and distributors will likely co-locate in the  
19 area.

1 Q. WHY IS THERE A DIFFERENCE IN ECONOMIC FORECASTS FOR THE  
2 NORTHERN PART OF WEST VIRGINIA COMPARED WITH THE SOUTHERN  
3 PART OF WEST VIRGINIA?

4 A. Those two parts of the state have entirely different circumstances and outlooks. For  
5 example, a significant portion of Southern WV has long had a considerably larger share  
6 of its employment, wages and output directly or indirectly tied to thermal and  
7 metallurgical coal production. Over time, however, as coal reserves have become  
8 increasingly depleted, a significant amount of the region's remaining coal is less  
9 competitive on cost compared to other coal basins in the U.S. and those in other nations  
10 abroad. Furthermore, various regulatory measures, technological progress and the  
11 emergence of natural gas as an alternative fuel source for baseload electricity generation  
12 have combined to cause the region's lower-sulfur thermal coal reserves to account for a  
13 vanishing share of use by domestic power plants. This is a shift that will remain in place  
14 going forward, and even allowing for the potential growth from export demand for the  
15 area's thermal and metallurgical coal, the industry will account for a shrinking share of  
16 Southern WV's economic base over the long term.

17 While Northern WV does contain some exposure to coal production activity, most  
18 of the region's coal output comes from highly productive operations that can compete on  
19 cost with other basins and overseas competitors. In addition, the region's energy sector is  
20 more diversified thanks to development of natural gas resources in the Marcellus and  
21 Utica Shale plays in portions of West Virginia, Ohio and Pennsylvania. Construction of



1 new pipeline infrastructure, liquefied natural gas export terminals, and capital  
2 investments by chemicals manufacturers in the region will bolster demand for gas and  
3 gas liquids produced in Northern WV. Furthermore, proposals to construct ethane  
4 crackers in neighboring Pennsylvania and Ohio, and potentially West Virginia, will lead  
5 to the creation of downstream activity that could lead to a growing need for new  
6 productive capacity over time, adding jobs in manufacturing on top of those required to  
7 extract and transport the natural gas.

8 Q. WHAT IS YOUR VIEW OF THE FUTURE ECONOMIC PROGRESS AND  
9 CONDITIONS IN THE COMPANIES' SERVICE TERRITORIES?

10 A. While all of the counties in the Companies' service territories are not expected to enjoy  
11 the same level of economic outcomes, future economic progress is expected to be more  
12 optimistic (relative to the state as a whole) for most counties served by the Companies  
13 given the healthier state of their underlying economic and demographic fundamentals at  
14 present and the growth in employment, industrial output and population (for certain  
15 areas) that is forecast through 2031.

16 **Economic Impacts of the Selected Generation Resources**

17 Q. SECONDLY, YOU INDICATED YOU WOULD DISCUSS THE ECONOMIC  
18 IMPACT OF THE PROPOSED TRANSACTION TO ACQUIRE ADDITIONAL  
19 GENERATION ASSETS BY THE COMPANIES.

20 A. Yes. See Exhibit JD-3, in which I provide an estimate of the economic impact of the  
21 Pleasants Power Station on the West Virginia economy for 2015.

1 Q. WHAT IS AN ECONOMIC IMPACT STUDY?

2 A. An economic impact study measures the contribution of an economic event on a specified  
3 state or regional economy. In this particular case, the event is the operation of the  
4 Pleasants Power station in 2015 and the area is West Virginia economy. FirstEnergy  
5 Corp., the parent of Pleasants' owner Allegheny Energy Supply, has publicly stated its  
6 intention to exit the competitive electric generation business by mid-2018. Absent a sale  
7 to a new owner, Pleasants is likely to be deactivated. The magnitude of the economic  
8 impact estimated in my study represents the economic activity that the economy would  
9 lose if the plant were to cease its operation.

10 Q. WHAT ARE THE ECONOMIC IMPACTS MEASURED BY YOUR ECONOMIC  
11 IMPACT STUDY?

12 A. The economic impact measured is the sum of the direct and the secondary impacts of the  
13 operation. The direct impact represents all the expenditures that are required for the  
14 operation of the station, including payroll and the purchase of the main inputs such as  
15 coal, as well as other inputs such as office supplies, insurance, etc. The secondary impact  
16 includes two types of impacts: indirect impact and induced impacts. The indirect impact  
17 represents the subsequent spending made by all entities that supply all the inputs required  
18 for the station's operation to happen. The induced impact represents the impact made by  
19 employees of the power station and all the subsequent suppliers as they re-spend some of  
20 their wages to purchase goods and services in the economy. These secondary impacts  
21 together form what is known as the "multiplier effect." The original stimulus to the

1 economy from the station's expenditures is re-spent multiple times through the rest of the  
2 economy.

3 Q. DID YOU USE A MODEL FOR YOUR ECONOMIC IMPACT ANALYSIS?

4 A. Yes. For this analysis I used the Impact for PLANning ("IMPLAN") model. IMPLAN  
5 is a well-known and widely used input-output model for economic impact studies.  
6 IMPLAN can be used to estimate the economic impact of varied economic events on  
7 regional economies. For examples, IMPLAN has been used to estimate the regional  
8 economic impact of sporting events/sports facilities, different types of economic  
9 development projects, new facilities, new or existing businesses, changes in government  
10 policies, etc. IMPLAN has been used by numerous government agencies at the federal,  
11 state, or local levels, private industries, economic development organizations, as well as  
12 university research centers. IMPLAN uses national, state, and county level data from a  
13 variety of government institutions such as the Regional Economic Accounts and National  
14 Income and Product Accounts from the Bureau of Economic Analysis; Current  
15 Employment Wages and Salary from the Bureau of Labor Statistics; and County Business  
16 Patterns from the US Census Bureau. IMPLAN uses these data to develop national  
17 production functions for nearly 500 industries, combined with local level regional  
18 purchasing coefficients, and household spending patterns. This study uses the most  
19 recent matrix available, which is developed using on the 2016 data. To estimate the  
20 impact, we utilized the production function of power-plant industry in West Virginia but  
21 with some adjustments. We adjusted the share of coal used in the production to around

1           75 percent and the share of the coal bought from West Virginia suppliers to 37 percent.

2           In addition, we also imposed that only 75 percent of the employees' disposable income  
3           will be re-spent in the state economy in accordance with the existing household spending  
4           patterns. Finally, we also examined the change in the impact should the facility increase  
5           the share of coal purchased within the state to 75 percent instead of 37 percent.

6   Q.    WHAT ADDITIONAL DATA DID YOU USE IN THE ESTIMATION OF THE  
7           ECONOMIC IMPACT ASSOCIATED WITH THE OPERATION OF PLEASANTS  
8           POWER STATION IN 2015?

9   A.    We used data inputs provided by the Pleasants Power station, which I reviewed and  
10          determined that they are reasonable inputs. These inputs included the following  
11          information about Pleasants in 2015:

12               (1) the plant produced \$297 million worth of output (i.e., direct expenditures),  
13               including payroll and fuel;

14               (2) the coal component (\$147.2 million) comprised about 74 percent of output, of  
15               which 37 percent was purchased from West Virginia suppliers; and

16               (3) about 75 percent of employees lived within West Virginia.

17   Q.    WHAT WERE THE RESULTS OF YOUR ECONOMIC IMPACT ANALYSIS FOR  
18           PLEASANTS IN 2015?

19   A.    In 2015, Pleasants created a total economic impact of \$395.8 million in the West Virginia  
20          economy. In addition to a direct impact of \$297 million, the station's operation generated  
21          a secondary impact of \$98.8 million. This means the facility operation generates a

1 multiplier impact of 1.3 on the West Virginia economy, which implies that every \$1  
2 million in output generates an additional \$300,000 in economic activity in the state. The  
3 operation directly and indirectly supported a total of 600 jobs with \$48.2 million in  
4 employee compensation. It also generated nearly \$6.5 million in select state tax revenue.

5 Q. WOULD THE IMPACTS ON THE WEST VIRGINIA ECONOMY INCREASE IF THE  
6 COMPANY PURCHASES MORE COAL FROM THE WEST VIRGINIA  
7 SUPPLIERS?

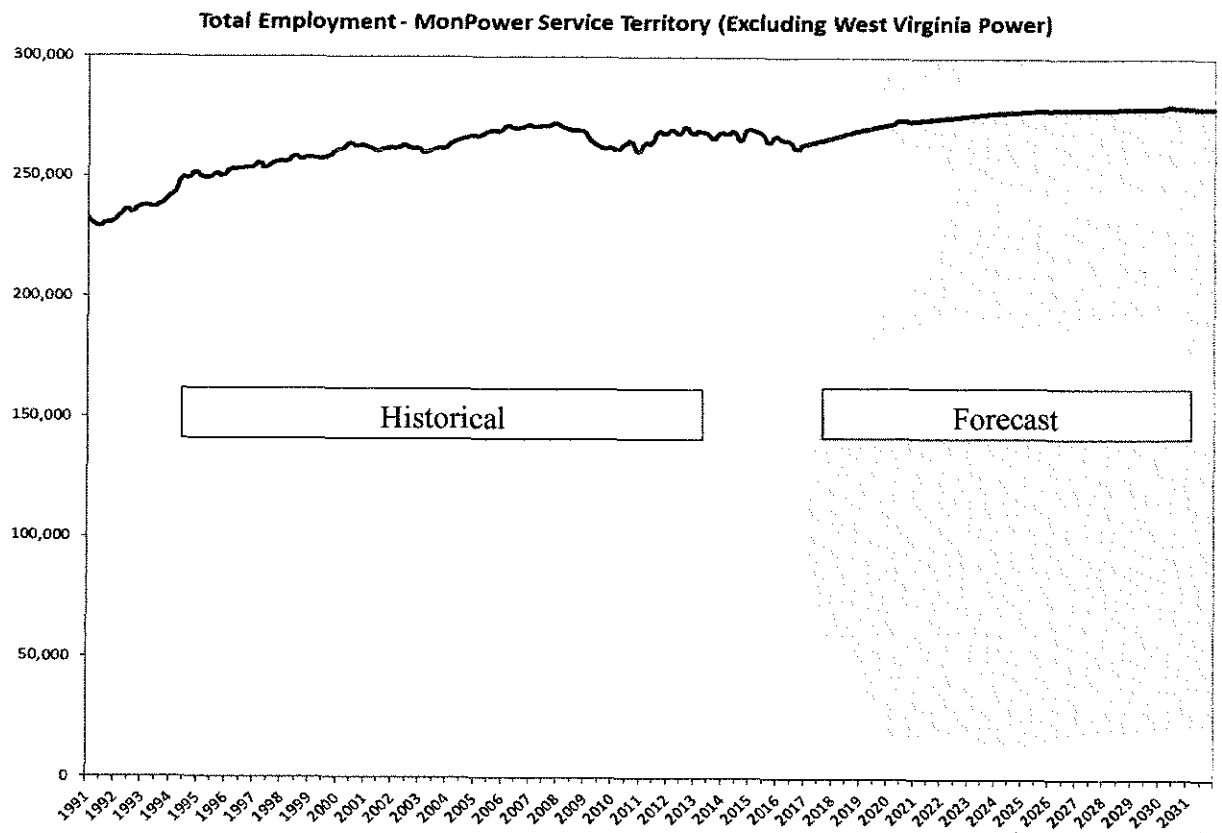
8 A. Yes. We estimate that if the share of coal purchased from the West Virginia suppliers  
9 increased from 37 percent to 75 percent, the total economic impact of the station's  
10 operation could rise to about nearly \$470 million, or 18 percent higher.

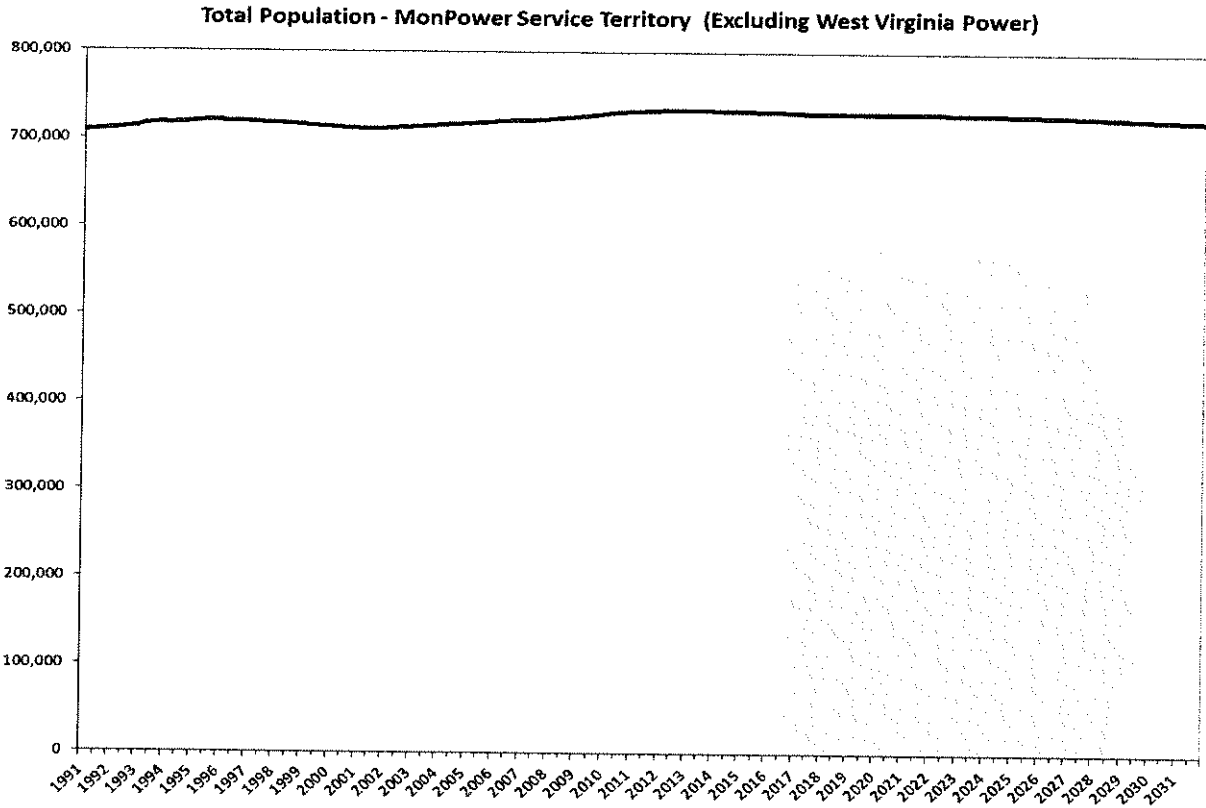
11 Q. WOULD THIS CURRENT APPROXIMATE \$400 MILLION IN ANNUAL  
12 ECONOMIC IMPACT BE LOST IF PLEASANTS WAS CLOSED OR  
13 DEACTIVATED?

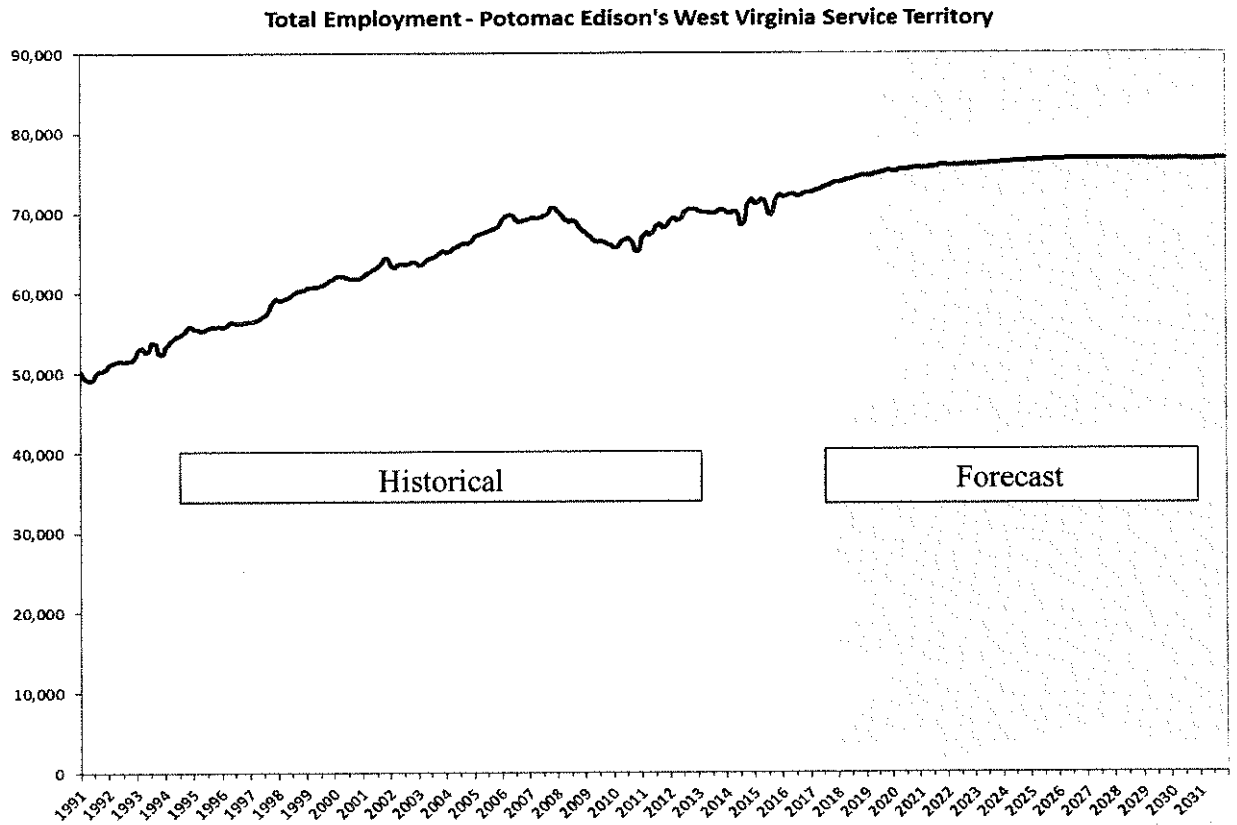
14 A. Yes, the direct and secondary impacts would be lost with a significant loss to the local  
15 economy in terms of economic activity and taxes. More specifically, there would be a  
16 loss of annual economic impact of approximately \$400 million with job loss of  
17 approximately 600 people and \$6.5 million in select state tax revenue.

18 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

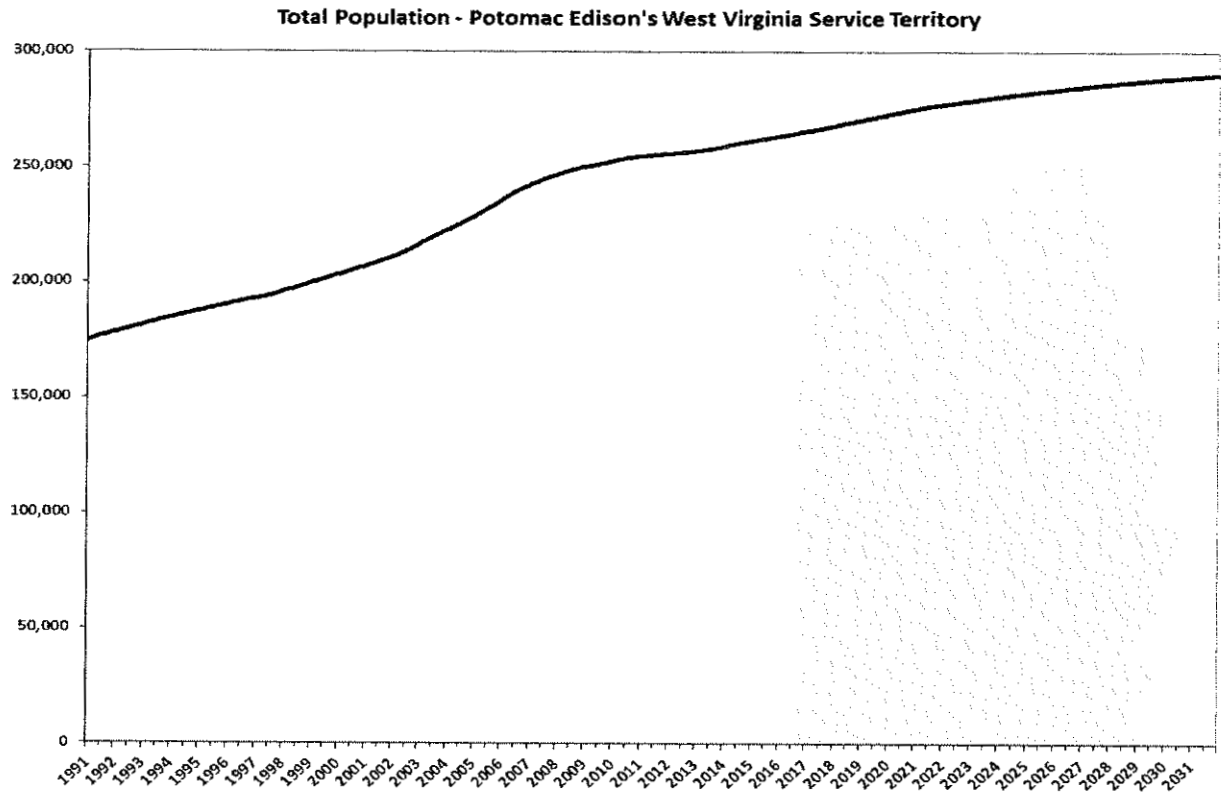
19 A. Yes, it does.

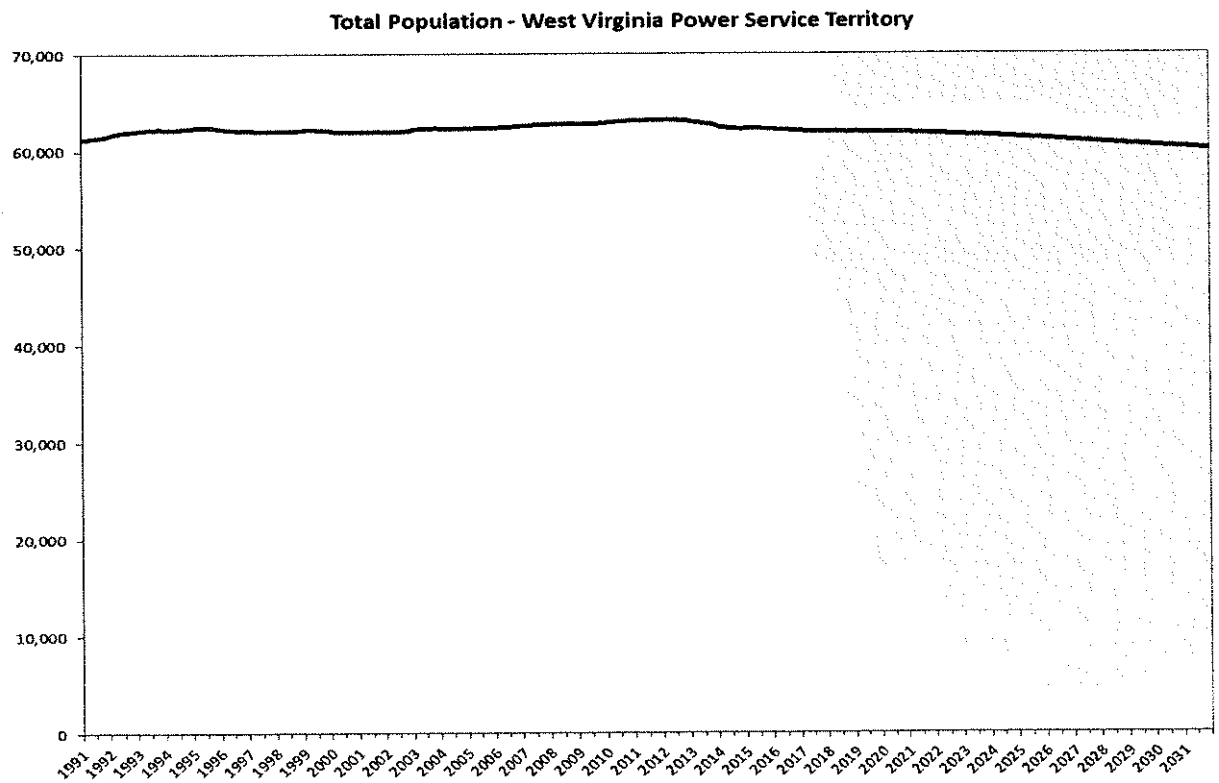
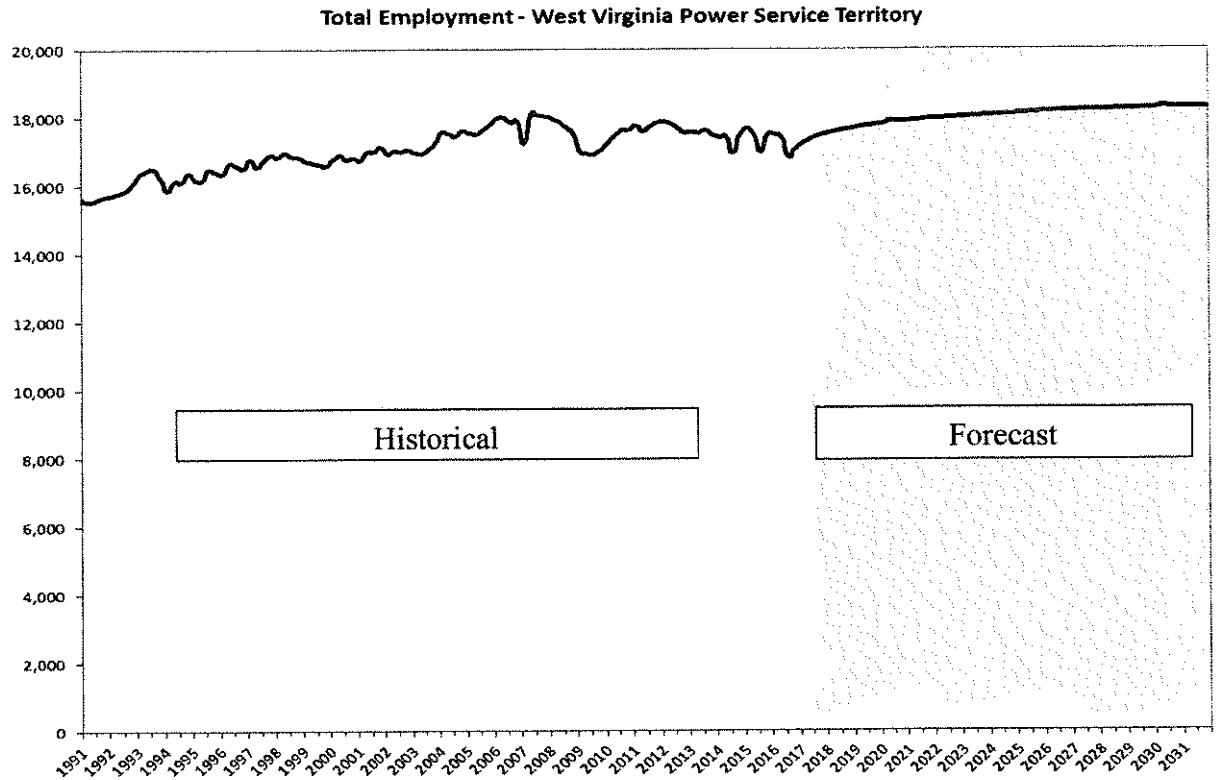


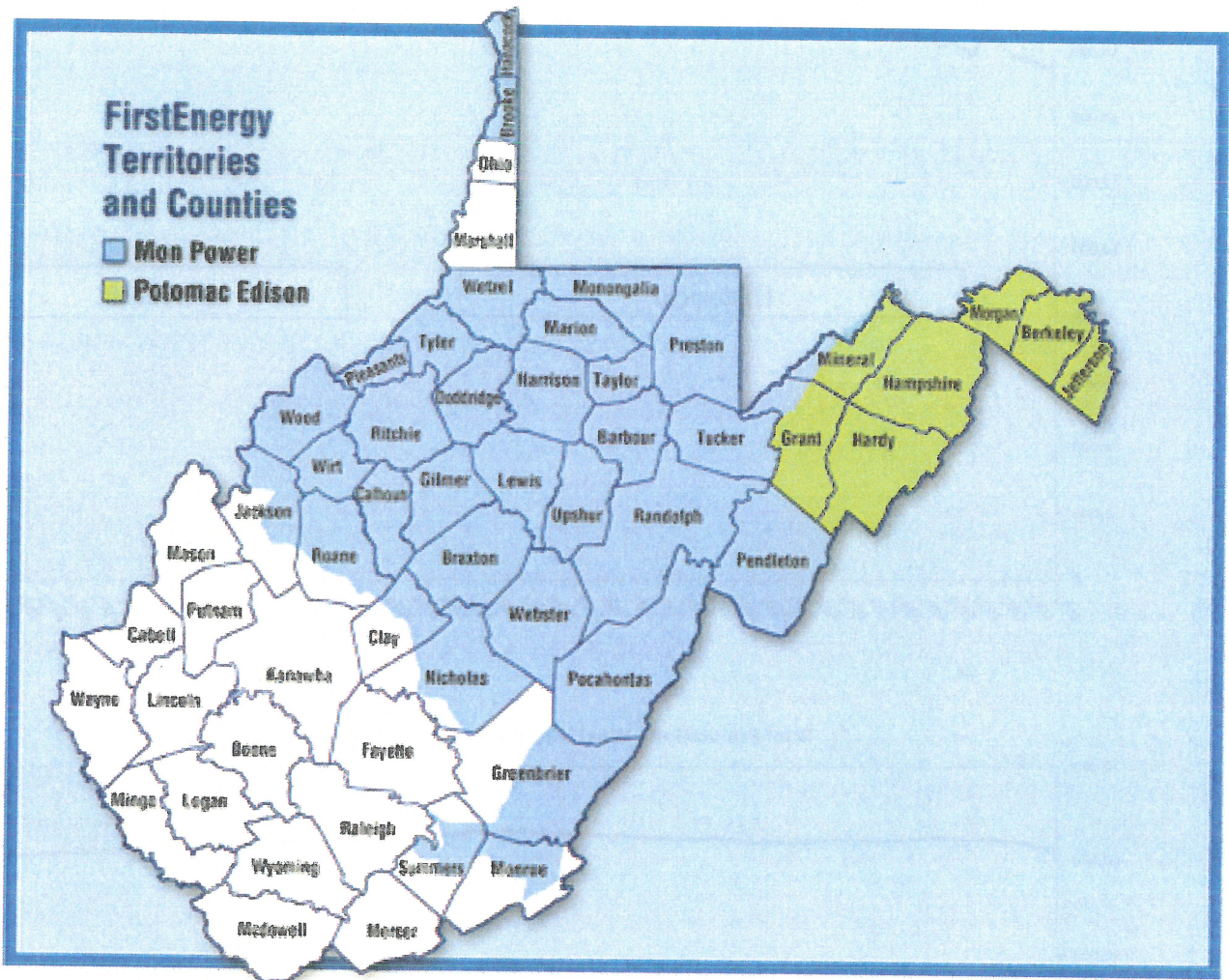














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## The Economic Impact of Operations at Pleasants Power Station on the West Virginia Economy

By **Christiadi, PhD**, Research Associate  
**John Deskins, PhD**, Director

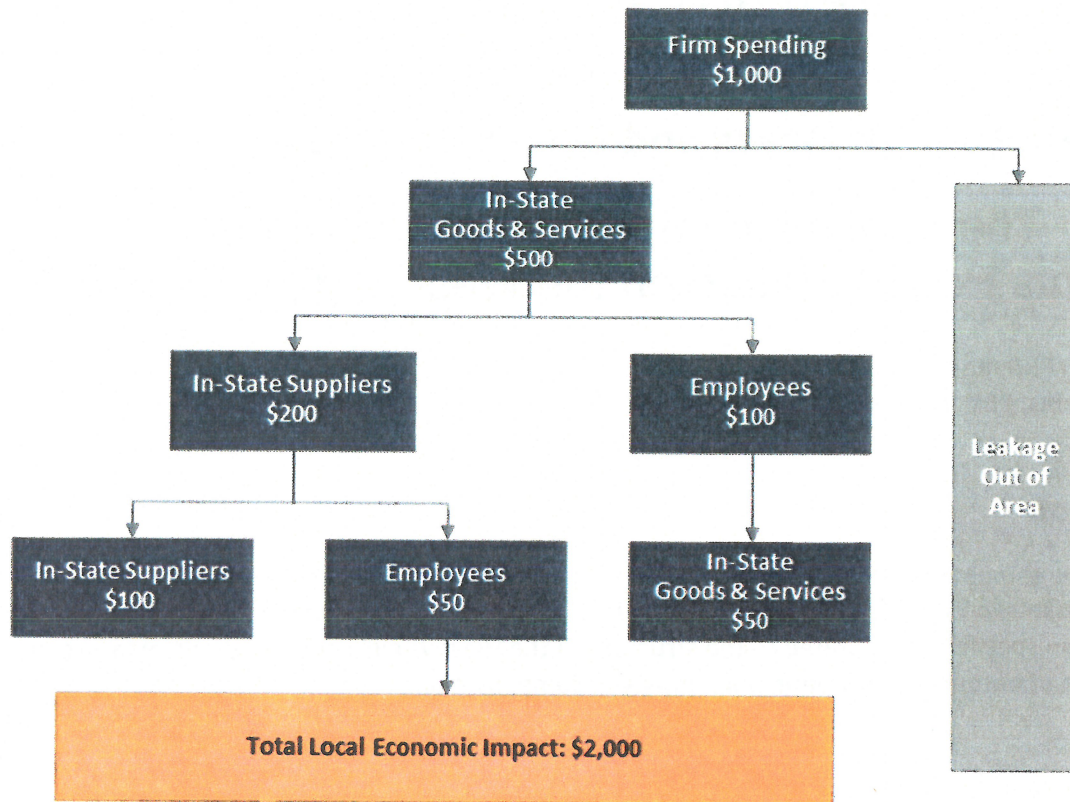
### **Introduction**

In this report we estimate the economic impact of the operation of the Pleasants Power Station (hereafter Pleasants) on the West Virginia economy in 2015. To estimate the impact we use the IMPLAN modeling system specifically calibrated to the structure of the West Virginia economy. We measure the impact in terms of output, employment, and employee compensation.

### **Methodology**

The total expenditure associated with the operations of the power station in 2015 represents the direct impact of the station. The station's overall impact, however, is not limited to the direct impact, but also includes the secondary economic impact accrued as those expenditures are re-spent throughout the rest of the economy. For example, as depicted in Figure 1, each year the station will purchase a variety of goods and services, such as coal and natural gas as the main inputs, and other inputs such as office supplies, insurance, etc. This means the coal, natural gas, and other suppliers need to increase their production to support the station's operation. As these suppliers increase production, their subsequent suppliers will increase production, and so on. Also, the power station and these supplies will employ a number of workers, part of whose income will be spent in the local economy, which generates more output, income, and employment impact. These secondary impacts together form what is known as the "multiplier effect." The original stimulus to the economy from the station's expenditures is re-spent multiple times through the rest of the economy. At each stage some of the expenditures "leak" out of the region as they are spent at companies outside the state. The combined direct impact and secondary impacts together constitute the total economic impact of the station's operations.

**Figure 1. Economic Impact Flow**



## Economic Impacts

We rely on the value of Pleasants' total output in 2015 to approximate the facility's total expenditure in that year. We also rely on information about the company's coal input and labor. In sum, we estimate the impact based on the following information:<sup>1</sup>

- The plant produced \$297 million of output.
- Coal accounted for about 74 percent of expenditures (\$147.2 million), of which 37 percent was purchased from West Virginia suppliers.
- About 75 percent of employees lived within the state.

**OUTPUT IMPACT:** Based on the assumption that Pleasants experienced direct expenditures of \$297 million in West Virginia, we estimate that the facility's operation generated an additional \$98.8 million in secondary impact as these monies were re-spent in the state economy (see Table 1). Including the initial direct impact, the station's operation in 2015 generated an estimated total impact of \$395.8 million in output.

**Table 1. The Economic Impact of Pleasant Power Station Operation in 2015**

Impact	Direct	Indirect & Induced	Total
Output (\$ millions)	297.0	98.8	395.8
Employment (jobs)	211	389	600
Employee-Compensation (\$ millions)	30.2	18.0	48.2
Assorted Tax (\$ millions)	--	--	6.5

Note: Output, Employee Compensation, and Taxes are measured in 2015 dollar. Assorted state taxes include sales, personal-income, property, and corporate business taxes.

**EMPLOYMENT, EMPLOYEE COMPENSATION, AND TAX REVENUE IMPACT:** The operation is estimated to support 211 jobs directly, and an additional 389 jobs in the secondary economy, resulting in a total employment impact of 600 jobs. We estimate that these workers earned a total compensation of \$48.2 million. The overall economic activity associated with the station's operation is estimated to generate nearly \$6.5 million in selected state tax revenue.

**INCREASED WEST VIRGINIA COAL USAGE:** In addition, we consider the possibility that Pleasants increases the amount of coal purchased from coal suppliers within West Virginia. We estimate that if the share of coal purchased from the West Virginia suppliers increases from 37 percent to 75 percent, then the total output impact of the station's operation could rise to nearly \$470 million, or 18 percent higher than the estimated impact above.

<sup>1</sup> This information was provided by First Energy and was not independently audited by the BBER.

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PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

Case No. 17-\_\_\_\_-E-\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of a Generation Resource  
Transaction and Related Relief

DIRECT TESTIMONY OF  
KURT P. LEUTHEUSER

March 7, 2017



1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Kurt P. Leutheuser, and my business address is 3550 Green Court, Ann  
3 Arbor, MI 48105-1579.

4 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

5 A. I am employed by Black & Veatch and my title is Project Manager. My employment is  
6 devoted to the operation of executing power related projects at Black & Veatch.

7 Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL  
8 BACKGROUND.

9 A. I attended the University of Michigan where I graduated with a Bachelor of Science in  
10 Civil Engineering in 1975, and went on to receive a Master of Science degree in Civil  
11 Engineering/Civil Engineering Construction in 1976. I became a licensed Professional  
12 Engineer in the state of Michigan in 1980. I have been employed by Black & Veatch  
13 since 1997, and have over 36 years of experience in positions related to project  
14 management, procurement, subcontract administration, scheduling, and cost control of  
15 power plant engineering and construction projects.

16 Q CAN YOU TELL US ABOUT BLACK & VEATCH AS A COMPANY AND ITS  
17 CREDENTIALS IN THE ELECTRIC POWER INDUSTRY?

18 A Founded in 1915, Black & Veatch is a leading global engineering, consulting, and  
19 construction company. Black & Veatch employs approximately 11,000 professionals in  
20 110 offices around the globe. Black & Veatch had an annual revenue of \$3B in 2015.

1        Our professionals provide engineering, technology, consulting, procurement,  
2        construction, and asset optimization solutions that span the lifecycle of projects in the  
3        power generation and power delivery industries. Black & Veatch offers customized  
4        planning, conceptual, and detailed design engineering, procurement, and construction  
5        (EPC) solutions to clients as they face changing business and regulatory environments.

6        Some highlights of our achievements in different technology areas are our involvement in  
7        the installation of nearly 130 major coal units (totaling more than 58,000 MW  
8        worldwide), the implementation of over 48,000 MW of AQC solutions, more than 280  
9        major combustion turbine projects worldwide (totaling more than 98,000 MW), our  
10       participation in more than half of the utility-scale photovoltaic (PV) plants currently  
11       operating in North America, and providing tailored power delivery solutions for entire  
12       project life cycles for more than seventy years, with experience in all transmission  
13       voltages from 69 kV to 765 kV and substations from 4 kV through 500 kV.

14    Q.    WHAT IS THE PURPOSE OF YOUR TESTIMONY?

15    A.    The purpose of my testimony is to provide a general overview of the technical evaluation  
16       of the proposal submitted by Allegheny Energy Supply Company, LLC as supplied by  
17       Mon Power and a physical on-site visit made February 20, 2017 related to Pleasants  
18       Power Station located in Willow Island, West Virginia.

1    **A.     The Evaluation and Its Components**

2    Q.     PLEASE DESCRIBE GENERALLY THE OVERALL EVALUATION BLACK &  
3           VEATCH CONDUCTED?

4    A.     Black & Veatch reviewed numerous technical documents contained in the proposal as  
5           well as those documents subsequently requested and two senior engineers conducted an  
6           on-site visit of the Pleasants Power Station in order to complete an independent technical  
7           evaluation of the proposal at the request of Mon Power.

8    Q.     DID YOU FIND ANYTHING INCONSISTENT WITH THE REPRESENTATIONS  
9           MADE IN THE PROPOSAL?

10   A.     Overall the technical data provided in the respondent's documents appear reasonable and  
11           appropriate for a facility of this type and age and was consistent with observations and  
12           information gained from the site visit. A couple of major findings of note were identified  
13           and are described in the results and conclusions paragraph of the evaluation report dated  
14           February 28, 2017.

15   Q.     WHAT DID YOU INVESTIGATE AT THE ON-SITE VISIT?

16   A.     We reviewed numerous technical documents, discussed operational procedures with plant  
17           operations personnel, reviewed outage reports and condition assessment documents  
18           referenced in our report, and performed a general site tour of the plant.

19

1 Q. WHAT IS YOUR OPINION OF THE OPERATIONAL PERFORMANCE OF  
2 PLEASANTS?

3 A. The unit operating plan is reasonable and the current availability factors are also  
4 reasonable as noted in the results and conclusions paragraph of the evaluation report.  
5 Additional operational details are provided in Section 3 of the report.

6 Q. DID YOU EVALUATE THE ENVIRONMENTAL ASPECTS OF PLEASANTS?

7 A: Yes, Black & Veatch reviewed the proposal section which provides significant detail of  
8 the Pleasants facility's environmental compliance plans. It includes a discussion of  
9 compliance with respect to Effluent Limit Guidelines (ELG), Mercury and Air Toxics  
10 Standards (MATS), Cross-State Air Pollution Rule (CSAPR), Environmental Control  
11 Equipment, Annual Emissions Rates, Coal Ash Regulations, and Coal Combustion  
12 Residuals Use all as further described in paragraph 3.8 of the report.

13 Q: DID YOU EVALUATE THE EXPECTED CAPITAL EXPENDITURES BUDGET AT  
14 THE PLANT?

15 A: Yes, a summary of the expected capital expenditures budget that was evaluated is  
16 described in the results and conclusions paragraph of the evaluation report and additional  
17 detail is provided in paragraph 3.10 of said report.

18 Q: WHAT ARE YOUR OTHER FINDINGS AS PART OF YOUR EVALUATION?

19 A: The plant appears to be generally well maintained as noted in paragraph 3.6 of the report.  
20 According to plant staff, the facility outage costs are included in the O&M budget, which  
21 would include the cost for boiler inspection and repair. Although no detailed review of

1 the O&M figures provided in the proposal Appendix material was performed, Black &  
2 Veatch did review the overall O&M costs provided and found that they are in line with a  
3 typical average O&M cost for other, similar facilities of this type and age. The existence  
4 of on-site spares for some of the larger and long lead time components that this facility  
5 has is noted in the report.

6 Q: DID YOU HIGHLIGHT ANY SPECIFIC TECHNICAL ITEMS OR MATTERS IN  
7 YOUR REPORT?

8 A: Two concerns are noted in the report. Firstly, the provided dispatch characteristics are in  
9 compliance with current Base Capacity Resource Minimum Unit-Specific Operating  
10 Parameters, as identified by PJM per report Reference 3, with the exceptions of warm up  
11 times as described in the results and conclusions paragraph of the report. Secondly, the  
12 uncertainty of environmental regulations and their associated costs as also described in  
13 the results and conclusions and paragraphs 3.8 and 3.10 of the report could be a concern.

14 Q: PLEASE SUMMARIZE YOUR FINDINGS

15 A: As noted in our report, overall the data provided in the respondent's documents appear  
16 reasonable and appropriate for a facility of this type and are appropriate for use in the  
17 analysis by Mon Power. In reviewing the data and the facility operating practices, it  
18 appears the facility is well maintained and capable of providing reliable service for many  
19 years. It currently has few operating limitations and despite its nearly forty year age has  
20 reasonable costs related to operation and maintenance which appear to be very effective  
21 at maintaining efficiency, reliability and availability levels in line with those represented

1           in the response. There are some challenges that are characterized in the response as well,  
2           and where appropriate, Black & Veatch has drawn attention to those challenges where  
3           they could affect economic dispatch in its report.

4    Q:    IS YOUR REPORT ATTACHED AS AN EXHIBIT?

5    A:    Yes, I attach the report summarizing and detailing our findings, which is attached as  
6           Exhibit KPL-1.

7    Q:    DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

8    A:    Yes.

# **INDEPENDENT TECHNICAL EVALUATION OF PROPOSAL FOR POWER SUPPLY GENERATION FACILITIES**

Monongahela Power Company

**PREPARED FOR**

Monongahela Power Company

**28 FEBRUARY 2017**



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## **Special Notice**

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## **1.0 Executive Summary**

Monongahela Power Company (MonPower) retained Black & Veatch to assist them in reviewing responses to their Request For Proposal for Power Supply Generation Facilities and/or Demand Resources. In accordance with this effort, Black & Veatch was directed to review the Allegheny Energy Supply Company, LLC response to the RFP, which pertains to the Pleasants Power Station, located in Pleasants County, West Virginia. Black & Veatch performed this service as an independent technical review of the respondent's bid document as well as a review of certain requested data as listed in Section 4.0 to support the results and conclusions provided herein.

### **1.1 RESULTS AND CONCLUSIONS**

Overall the technical data provided in the respondent's documents appear reasonable and appropriate for a facility of this type and are appropriate for use in the analysis by MonPower. In reviewing the data and the facility operating practices it appears the facility is well-maintained and capable of providing reliable service for many years. It currently has few operating limitations and despite its nearly 40 year age has reasonable costs related to operation and maintenance which appear to be very effective in maintaining efficiency, reliability and availability levels in line with those represented in the response. There are some challenges that are characterized in the response as well, and where appropriate, Black & Veatch has drawn attention to those challenges where they could affect economic dispatch. The major findings of note are as follows.

- ✱ The current availability factors are reasonable based upon the plant's operating history.
- ✱ The plant's Reliability Centered Maintenance (RCM) program is an effective tool that helps focus maintenance efforts, and appears to have enhanced the availability of the facility since 2012. The positive impact is especially evident with respect to management of the Unit 2 boiler hot sections as described in Section 3.5.1. This experience should improve availability of both Unit 1 and Unit 2 as the plant institutes lessons learned with respect to tube material selection and procurement practices to extend creep failure life of hot sections.
- ✱ The represented remaining asset life of at least 20 years is reasonable, provided the current plant operation and maintenance practices are continued.
- ✱ The unit operating plan is reasonable and consistent with similar facilities of this type.
- ✱ It is not possible for Black & Veatch to comment on the compatibility of the plant control systems with the systems at other plants from a spare parts and maintainability standpoint because we have no information on the systems at the other plants.
- ✱ The provided dispatch characteristics are in compliance with current Base Capacity Resource Minimum Unit-Specific Operating Parameters, as identified in report Reference 3, with the following exceptions:
  - Hot start, warm start and cold start up time of either Unit exceeds the minimum requirement of 4 hours and 6 hours, and 10 hours respectively. *Note: If a unit cannot meet the minimum operating parameters, adjusted parameters may be requested of PJM.*

- With respect to costs, the timing or frequency of environmental compliance costs are uncertain in several areas, as shown in the table below.

DATE	AMOUNT	DESCRIPTION
2023 or sooner	\$80,000,000 - \$120,000,000 (per response)	Effluent Limit Guidelines (ELG) compliance measures are likely to require new systems, but the magnitude and timing is uncertain.
2019	\$5,700,000 (per CAPEX plan 2019)	Costs are known, but increased SCR Catalyst Replacement interval in association with Mercury and Air Toxics Standards (MATS) compliance is uncertain.
2016	Unknown	The magnitude or necessity of any additional costs (other than SCR replacements) associated with CSAPRII Compliance (Lower NOx levels), such as required purchase of NOx allowances, are unknown.
2023 and later	\$45,000,000 (per response)	Expense related to Coal Combustion Residual (CCR) regulations compliance upon eventual closure of McElroy's Run is likely to occur, but may be deferred depending on the ability to negotiate offtake agreements for coal combustion residuals.

Black & Veatch believes the RFP response is as technically complete as it can be. Supporting material for these recommendations is included in the Technical Review - Section 3.0.

## **2.0 Scope of Work**

**Black & Veatch's scope of work for this review is to provide the following:**

- ❖ **Overall planning and participations in periodic meetings or conference calls with Monongahela Power Company.**
- ❖ **Review and opinion on technical inputs (including output, heat rate, and availability) from bidders for economic modeling (by others).**
- ❖ **Review and opinion on forecasted O&M expenses, outages and major maintenance expenses as forecast by bidders.**

### 3.0 Technical Review

This Technical Review focuses on the Proposal to Monongahela Power Company (MonPower) from Allegheny Energy Supply Company, LLC in response to the RFP issue. The proposal response is based on the Pleasants Power Station, located in Pleasant's County, West Virginia, as discussed more fully herein.

#### 3.1 GENERATING FACILITY CAPACITY CHARACTERISTICS

There are two units located at the Pleasants Power Station. The response to the RFP is included in the following table:

RFP	UNIT 1	UNIT 2
Nameplate Capacity	700 GMW	700 GMW
Net Summer Operating Capacity	July and September: 644 NMW August: 639 NMW	July and September: 644 NMW August: 639 NMW
Net Winter Operating Capacity	650 NMW	650 NMW
UCAP (2016/2017)	1108.1 NMW	
Expected UCAP (2020/2021)	1159.4 NMW	

Unforced Capacity (UCAP) is the MW value of a capacity resource in the PJM market. For generating units, UCAP is equal to the Installed Capacity x (1-EFORD). The Equivalent Forced Outage Rate - Demand (EFORD) is defined as the probability that a unit will not meet its demand periods for generating requirements. Based on the total summertime generating capacity therefore, the corresponding EFORD for 1108.1 NMW and 1159.4 NMW would be calculated as follows:

$$EFORD (2016/2017) = -\left\{\frac{UCAP}{CAP} - 1\right\} = -\left\{\frac{1108.1}{1278} - 1\right\} = 13.3\%$$

$$EFORD (2020/2021) = -\left\{\frac{UCAP}{CAP} - 1\right\} = -\left\{\frac{1159.4}{1278} - 1\right\} = 9.3\%$$

The historical EFORD for both units is included in table 4.1.4.1 of Reference 2, summarized as follows:

	2011	2012	2013	2014	2015	2016 (EST)	AVERAGE
Unit 1	9.67%	13.43%	9.14%	6.12%	9.80%	8.97%	9.52
Unit 2	6.77%	19.32%	10.66%	7.13%	8.17%	3.19%	9.21

It should be noted that 2012 had a relatively high EFORD, which appears to be driven predominately by repairs of Unit 2 boiler tube leaks. The overall conclusion is that the expected UCAP for 2020/2021 appears reasonable based on average historical conditions over a 5-6 year period. Moving forward, a key consideration will be the level of maintenance that is required for the boilers, which is the main driver of the Unit EFORD.

On a unit by unit basis, Black & Veatch reviewed the Generation Facility Operating Data included in section 4.1.4.1 in detail in Section 3.5 of this study. Based on that review and intelligence obtained during the site visit, where the facility operation and maintenance practices were reviewed, Black & Veatch believes that the forward looking UCAP(2020/2021) figures are reasonable for this facility.

### **3.2 EXPECTED USEFUL LIFE OF FACILITY**

Section 4.1.2.5 of Reference 2 claims the facility useful life is expected to extend beyond 20 years, using accepted utility maintenance practices. The units achieved commercial operation in 1979 and 1980, which makes them 37 years old and 38 years old, respectively. Adding 20 years to these figures requires a total operational life of 57 to 58 years. The normal design life for units of this type is 40 years; however, it is possible through normal maintenance to operate longer than that depending on the robustness of the original design and the effectiveness of the operation and maintenance practices of the plant throughout its life. The facility employs condition monitoring as a part of its Reliability Centered Maintenance (RCM) Program. The boilers, which are the major contributors to system availability, are subject to inspection during outages in order to identify problem areas and effect necessary repairs.

Black & Veatch reviewed the boiler outage reports for Unit 1 and Unit 2 in order to understand the condition of the boilers and any failure mechanisms and resolutions to them. There are two main mechanisms present: (i) fireside tube erosion from sliding ash, and/or sootblower impingement, and (ii) creep life failure of the finishing superheater. The fireside tube erosion issues have been addressed using weld repair methods (tube patch or Dutchman) on an as-needed basis depending on the level of tube wall thickness loss. Creep life failure is a separate issue, where hot sections of the boiler surface area undergo metallurgical change over time, requiring replacement of the affected tubes. The facility has such a monitoring and replacement plan in place and has performed hot section replacements as needed based on condition. Unit 2 was subject to boiler tube failure problems due to premature creep life failure of some of the finishing superheater replacement tubes. Condition assessment of the tube metallurgy identified tube compositions that were within specifications, but had manufacturing flaws and a lack of design margin, resulting in premature life. The plant staff has indicated a need to refine and improve the boiler tube procurement process to ensure material with better properties are installed in the future. These repair and replacement activities are currently performed as normal operation and maintenance of the boilers.

In addition to the boilers, the facility performs regular inspection and maintenance of the turbines, generators, transformers, and other major plant components in a manner that is consistent with good engineering practice for a facility of this type and as such has the necessary systems in place to monitor and correct system health as needed to maintain an additional 20 year plant life.

### 3.3 DISPATCH CHARACTERISTICS

This section discusses the dispatch characteristics included in the proposal as compared to the Capacity Performance and Base Capacity Resource Minimum Unit-Specific Operating Parameters, as identified in report Reference 3.

The following table summarizes the requested data, the response data, and the associated minimum requirements.

REQUESTED IN RFP	PLEASANTS UNIT 1 (PER PROPOSAL)	PLEASANTS UNIT 2 (PER PROPOSAL)	MINIMUM OPERATING PARAMETER (PER REFERENCE 3)	CRITERIA MET (YES/NO)
Minimum Load Level	1 BFP min=225 MW 2 BFB min=300 MW	1 BFP min=225 MW 2 BFB min=300 MW	Required Turn Down=1.5 or more.	YES <sup>(1)</sup>
Ramp Rates (UP and DOWN)	5MW/MIN -UP 5MW/MIN-DOWN	5MW/MIN -UP 5MW/MIN-DOWN	N/A	N/A
Heat Rate Curve (5 <sup>th</sup> order curve coefficients)	2 <sup>nd</sup> order curve coefficients	2 <sup>nd</sup> order curve coefficients	N/A	N/A
Start-Up Fuel Consumption	Coal: 400 T/9850 MMBtu NG:11,570mcf/12,450 MMBtu Power: 340 MWH	Coal: 485 T/11,700 MMBtu NG:10,8000mcf/11,550MMBtu Power: 300 MWH	N/A	N/A
Start-Up Heat Rate	52,226 Btu/Nkwh	49,181 btu/Nkwh	N/A	N/A
Start-up time (with 1-hour notification from dispatch)	Cold: 12 hours Warm: 9 hours Hot: 9 hours Historical: 8.5 hours	Cold: 12 hours Warm: 9 hours Hot: 9 hours Historical: 13 hours	(Hot: 4 hours, warm: 6 hours, cold: 10 hours)	Hot: NO Warm: NO Cold: NO
Annual Hours in Start-Up (Based on 15 Start-Ups)	127.5 hours	195 hours	N/A	N/A
Shutdown Fuel Consumption	Coal: 126 T/3080 MMBtu NG:1230 mcf/1320 MMBtu	Coal: 126 T/3018 MMBtu NG:1230 mcf/1320 MMBtu	N/A	N/A
Shutdown Heat Rate	12,060 btu/Nkwh	11,882 btu/Nkwh	N/A	N/A

REQUESTED IN RFP	PLEASANTS UNIT 1 (PER PROPOSAL)	PLEASANTS UNIT 2 (PER PROPOSAL)	MINIMUM OPERATING PARAMETER (PER REFERENCE 3)	CRITERIA MET (YES/NO)
Shutdown Time (from 300 MW)	1.5 hours	1.5 hours	N/A	N/A
Annual Hours in Shutdown (based on 15 shutdowns)	22.5 hours	22.5 hours	N/A	N/A
Hours at Full Load	Operating at >98% of NDC: 2500 hours Adjusted for Seasonal Capability: 2800 hours	Operating at >98% of NDC: 2500 hours Adjusted for Seasonal Capability: 2800 hours	N/A	N/A
Temperature Impact to Capability	July and September: 644 NMW August: 639 NMW	July and September: 644 NMW August: 639 NMW	N/A	N/A

Notes:

- (1) The Turn Down Ratio is defined as the ratio of economic maximum MW to economic minimum MW. The summer operating capacity  $639\text{MW}/300\text{MW}=2.13$ , which exceeds this requirement.

Heat Rate:

The units have heat rate curves included in the proposal response which are presumed to conform with units proscribed by PJM (in MMBtu/MWh) and be based on observed plant performance. Based on those curves, Black & Veatch calculated the Net Plant Heat Rate for Unit 1 to be 10,166 Btu/kWh, and for Unit 2 to be 10,016 Btu/kWh, at 650 MW<sub>Net</sub>, per the formula provided. For comparison purposes, the Kraftwerk Union AG, Thermal Cycle Heat Balance for full load (Design) case (Reference 4) shows 7,724 Btu/kWh. The higher heat rate likely reflects the combined effects of auxiliary load additions and degradation over time vs. new and clean theoretical performance. Accordingly, while a detailed performance analysis of the plant through performance testing and auxiliary load accounting was neither included nor requested in this analysis, Black & Veatch believes the higher claimed heat rates derived from the provided heat rate curve coefficients are reasonable and achievable for units of this type.

### 3.4 CURRENT/HISTORICAL OPERATING LIMITATIONS

The proposal states that "Pleasants is fully dispatchable and all known current operational limitations that reduce Pleasant's availability or ability to dispatch have been identified in this section. No major historical operational limitations that have reduced Pleasant's availability or ability to regulate have been identified."



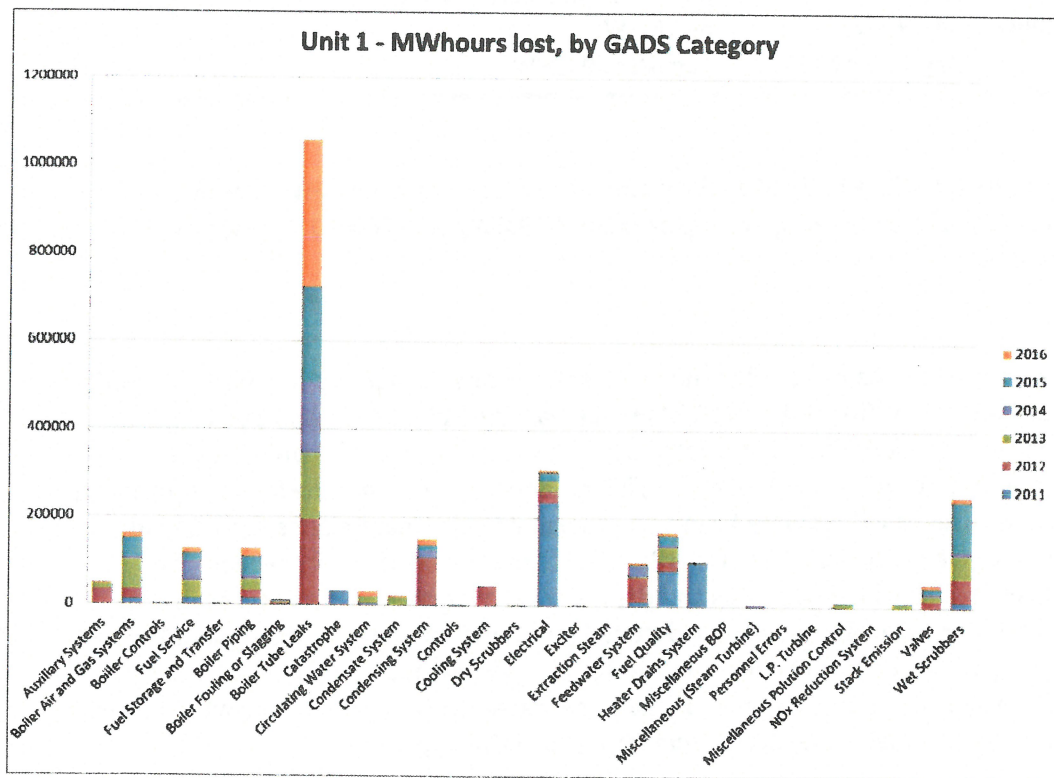
It should be noted that during the site visit, it was explained that for a time, Pleasants was operating with a slightly reduced steam supply temperature (by 5 degrees F). This would have a slight effect on unit heat rate and capacity. This practice has since been eliminated. Historically, the major source of limitations on unit availability has been boiler issues, which are addressed through routine inspection and repair as described in Section 3.2 above.

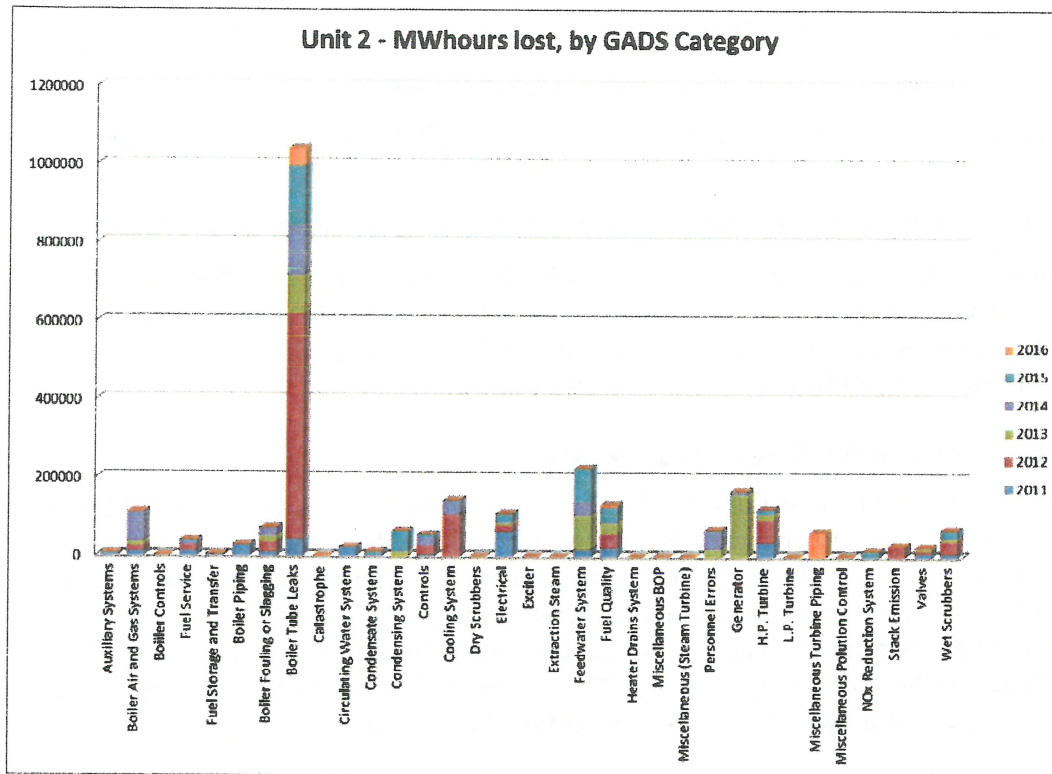
### 3.5 GENERATION FACILITY OPERATING DATA

The proposal included operating data, including annual run time hours, capacity factor, availability factor, and EFORD for both units for the past five years as requested in the RFP. The EFORD figures included a breakdown by Generating Availability Data System (GADS) category by operating year from 2011 through 2016.

#### 3.5.1 Current Operating Issues

No specific information on current operational concerns was provided within the proposal document. Black & Veatch reviewed the GADS breakdown by putting it into graphical form in order to identify trends in availability contributors. The following graphs were produced:





It can be seen from this data that boiler tube leaks are the major source of lost generation due to unavailability for each unit. As noted previously concerning the Asset Life, the boilers are subjected to failure mechanisms that include fireside tube erosion from sliding ash and sootblower impingement, creep life failure of the finishing superheaters. These issues are common in all boilers and over time will force repair or replacement of the affected boiler components. The key concern from tube erosion is the loss of tube wall thickness, and the key concern from the creep life failure of hot sections is change of the metallurgical properties of the tube material over time. As is customary, the Pleasants facility performs routine boiler test and inspections during boiler outages to identify and repair the boilers as a part of its routine operation and maintenance. An interesting observation from the historical GADS data concerning boiler tube failures is that although the total unavailability for both units is similar, the Unit 2 unavailability is predominately front loaded in year 2012, when repairs were made that resulted in better availability in later years.

Other typical concerns for boiler facilities typically include failure mechanisms in high energy piping due to Flow Accelerated Corrosion (FAC). This affects piping with certain temperature conditions most commonly found in boiler feed system piping. Industry has responded with recommendations for FAC monitoring and the Pleasants facility was found to have an FAC monitoring plan.

### 3.5.2 Historical Equipment Issues and Resolutions

Historical operating issues included in the proposal response were as follows:

- 2007 – Stack Fall-Out issues (new stack installed)

- ☛ 2012 – Cooling Tower Blowdown Treatment (new wastewater treatment facility installed)
- ☛ 2014 – Detached Stack Plume (new SO<sub>3</sub> treatment system installed)
- ☛ 2011 – PLS1 GSU Transformer Replacement (spare GSU installed w/new spare purchased on spare pad)
- ☛ Miscellaneous Coal Mill Inspections/Overhauls and Sootblowing Air Compressor Overhauls

Resolutions and their associated project costs are included for these items, which Black & Veatch has no comment on other than it is presumed that the mitigation costs for these measures have been either fully realized or are otherwise included in the facility operating plan as they do not appear to be included in the CAPEX plan for the next five years.

### **3.6 GENERATION FACILITY OPERATING PLAN**

The facility utilizes Ovation (Emerson Controls) for the boilers and scrubbers, and Siemens T3000 for the steam turbines. The facility outage costs are included in the O&M budget according to plant staff, which would include the cost for boiler inspection and repair. Although no detailed review of the O&M figures provided in the proposal Appendix material was performed, Black & Veatch did review the overall O&M costs provided and found that they are in line with a typical average O&M cost for other, similar facilities of this type and age. The existence of spares for the larger and long lead time components that this facility has is very important. These include:

- ☛ Spare GSU transformer
- ☛ Spare ID Fan Motor
- ☛ Spare PA Fan Motor
- ☛ Spare HP Turbine Assembly (non-restored)
- ☛ Spare Generator Rotor (non-restored)

The existence of additional spares, such as rotating assemblies for pumps and motors are not discussed but presumably some of these items would be included in the \$10 million of on-site stores.

The electrical systems reviewed for the Pleasants Power Station were the electric generator, the large power transformers, the large motors and the electrical switchgear.

#### **3.6.1 Generators/Exciters**

The reports listed in the appendix for the generator were reviewed and plant personnel were interviewed for additional information. The generators have had failures in the past. Particularly the Unit 1 winding failure in 2004 and the Unit 2 exciter diode wheel failure in 2006 were in-service failures that caused unit outages. The cause of the winding failure was not provided to Black & Veatch. The diode wheel failure was the result of a generator cooling system leak that sprayed water on the electrical parts of the diode wheel. There is nothing in the service reports that would indicate there are any future concerns like these past failures.

The 2014 Generator Inspection report for Unit 1 does have a list of recommended repairs that the report indicates are to be done during an outage in 2017. Plant personnel indicated that there is no planned generator repair outage until 2020 or 2023. The reported issues are related to parts of the generator which are demonstrating that they are not as tight as required. None of the reported issues were critical at the time of the inspection report. However, waiting 6 or 9 years to address these issues may be too long to avoid serious damage to the generator.

The Unit 2 had an inspection in 2016 and the Unit 1 exciter will be sent to Siemens in 2017 for inspection and repair.

In general, the testing inspection and repairs on the generators and exciters seem reasonable and consistent with good operating practice. The delay in addressing recommended repairs on the Unit 1 generator may not be advisable.

### **3.6.2 Large Transformers**

The large power transformers reviewed are the Generator Step Up (GSU) transformers, No. 1 Main Transformer, No. 2 Main Transformer, auxiliary transformers 1A Reserve Transformer, 1B Reserve Transformer, and No. 11, 12, 21 and 22 Aux Transformers are the transformers considered.

The transformers at Pleasants Power Station are equipped with various indicators and also have continuous monitors for water and combustible gas in the insulating oil. Data from this instrumentation is monitored and recorded regularly. Monitoring water in the oil is critical because too much water in the oil will cause a failure of the unit and changes in the amount of water can indicate a problem with the winding insulation. The presence of combustible gas in the oil indicates the oil is being degraded and the ratios of the different combustible gases indicate what type of failure in the transformer is causing the degradation of the oil.

There was a major failure of a Unit 1 GSU bushing failure in 2011. The failure resulted in the transformer being scrapped and replaced with the on-site spare transformer. This failure was the result of a defective bushing. There has been an industry wide problem with this manufacturer's bushing and the Pleasants Power Station has removed all of these bushings from the transformers at that plant.

The original spare transformer that was installed on Unit 1 has been replaced. This is an important spare part because the lead time for a new or rebuilt transformer is typically around 12 months and the generating unit cannot run without a functional GSU. Having a spare GSU can greatly reduce the impact of a GSU failure on unit availability.

The auxiliary transformers have installed spares with the reserve aux/main aux transformer topography of the electrical system at the plant. This approach minimizes the impact of a single transformer failure on the operation of the plant.

The maintenance on the large transformers appears to be appropriate and there do not appear to be any operational issues that should limit the life of the large transformers at the site.

### **3.6.3 Large Motors**

There are no reported issues with the large motors on the site. The maintenance routine for the motors is appropriate for this equipment. Major in-service failures of these motors have been avoided through inspections and consulting information from other plants. This implies the plant maintenance practices are working.

### **3.6.4 Switchgear**

There are no reported issues with the medium voltage switchgear on the site. The plant personnel report that they are using infrared thermography to identify loose connections in the switchgear. A loose connection could cause a failure of this equipment. The maintenance routine for the switchgear is appropriate for this equipment.

## **3.7 GENERATION FACILITY FUEL SUPPLY**

The proposal included details on coal and natural gas supply and transportation contracts from 2017 through 2019. The site is primarily served by water from the Ohio River. The river can be subject to freezing during winter, requiring an increase in the fuel storage inventory. The typical winter inventory is 30 days; however, the proposal states that there is enough space to accommodate up to 62 days' supply.

## **3.8 EMISSIONS AND WASTE DISPOSAL COMPLIANCE**

Black & Veatch reviewed the proposal section which provides significant detail of the Pleasants facility's environmental compliance plans. It includes a discussion of compliance with respect to Effluent Limit Guidelines (ELG), Mercury and Air Toxics Standards (MATS), Cross-State Air Pollution Rule (CSAPR), Environmental Control Equipment, Annual Emissions Rates, Coal Ash Regulations, and Coal Combustion Residuals Use.

### **3.8.1 Effluent Limit Guidelines**

The ELG rules effective January 4, 2016 will impose new limits on wastewater from ash handling and scrubbing systems. The cost associated with a new system is stated to be in the \$80 to \$120 million dollar range, but the timing and the details of what systems will be required are unclear except that the compliance deadline is stated to be linked to each plant's NPDES permit renewal but not later than the end of 2023. It is not clear if the installation of new treatment systems or a firm plan to comply is sufficient for NPDES renewal, though the latter is not without precedent. The ultimate compliance date could be before NPDES renewal depending on the requirements of the permitting authority. Nonetheless, more analysis should be taken to fully understand the cost and timing impact for compliance measures on this item as they do not appear to be included in the current CAPEX plan.

### **3.8.2 Mercury and Air Toxics**

There is an implied cost increase likely due to operational changes needed to support MATS in the form of increased SCR catalyst replacement intervals and enhanced control of boiler duct gas in-leakage. These costs are not characterized in the historical operation as MATS compliance has only been effective since April 2016. It should be noted the SCR Catalyst replacement cost was stated to



be included in the CAPEX plan (\$5,771,073) for 2019. The interval for that recurring cost is not known.

### 3.8.3 Cross State Air Pollution Rule (CSAPR)

Compliance with CSPARII will impose new ozone season NOx reductions of 30% beginning in May 2017, according to the proposal. The facility is expecting additional inspections and compliance costs associated with repair of any identified deficiencies during the three-year inspection and increased SCR catalyst replacement intervals. It is not clear from the proposal if the facility can fully comply with the new NOx limits or if additional costs for NOx allowances will be needed, or other penalties will be imposed. There are similar concerns expressed over the need to operate combustion ash removal systems and FGD systems operation to meet the required periodic particulate matter limits. Potential costs are uncertain since these new rules are uncertain and compliance will depend on how well the plant can operate within the new limits.

### 3.8.4 Coal Ash Regulations

The facility currently utilizes the McElroy's Run impoundment for disposal of ash which is projected to have a useful life through (approximately) 2024, per the proposal. If and when McElroy's Run is required to close, a closure cost of \$45 Million is provided. The facility is currently utilizing FGD byproduct for conversion to gypsum, and is exploring other opportunities for reuse of bottom ash. The success of these efforts can potentially push back the expected closure date of impoundment, though it is not possible to characterize that date as it is contingent upon the negotiation of off-take agreements for the residuals.

## 3.9 WATER SUPPLY

The proposal response includes significant details of the plant's water supply and discharges, including the NPDES permit numbers, use descriptions, and outfall treatment. There are three (3) historical NPDES permit violations described as well as mitigation plans employed to resolve them. To its credit, it is noteworthy that the site has not had an NPDES permit exceedance in over three years. With respect to potential costs the report lists remediation plans for Underground Storage Tanks (UST), and Asset Retirement Obligation (ARO) accounts of approximately \$1.8 Million.

## 3.10 CAPITAL EXPENDITURES

The RFP requested a list of historical and budgeted capital expenditures for the generation facility. For the past five years the response included the following:

PREVIOUS YEARS	CAPITAL EXPENSE	FUTURE YEARS	EXPECTED RECURRING ANNUAL CAPEX	MAJOR PLANNED CAPEX
2011	\$34,038,997	2017	N/A	N/A
2012	\$13,782,793	2018	\$35,310,755	
2013	\$55,648,474	2019	\$17,260,738	\$5,771,073 <sup>(1)</sup>

PREVIOUS YEARS	CAPITAL EXPENSE	FUTURE YEARS	EXPECTED RECURRING ANNUAL CAPEX	MAJOR PLANNED CAPEX
2014	\$35,540,817	2020	\$18,832,411	
2015	\$39,136,194	2021	\$17,252,737	
2016 (EST)	\$48,465,629	2022	\$32,754,119	

(1) For pollution control

A listing of spare parts and components currently owned by the facility was included in the Generation Facility Operating Plan, which is discussed in Section 3.6.

No description for the actual projects involved with the expected future expenses was provided with the proposal, however the following expenses were mentioned in the report body. It is presumed the expected recurring annual O&M expenses would include boiler and turbine life extension, or BOP work, however this is not clear in the response, and should be verified.

YEAR	EXPENSE	DESCRIPTION
2007	\$101,580,000	New stack with 2 flues, fully scrubbed with no flue gas bypass
2011	\$7,000,000	Installation spare GSU, with new spare purchased and on spare pad
2012	\$28,920,000	Installation of WWT facility for cooling tower blowdown
2014	\$17,260,000	Installation of SBS system to treat SO <sub>3</sub> in flue gas prior to exiting stack
2023 or sooner	\$80,000,000 - \$120,000,000 (estimated)	Effluent Limit Guidelines (ELG) compliance (Section 4.1.5.1)
2016	unknown	Increased SCR Catalyst Replacement in association with Mercury and Air Toxics Standards (MATS) compliance (Section 4.1.5.1)
2023 and later	\$45,000,000 (estimated)	Coal Combustion Residual (CCR) regulations compliance upon eventual closure of McElroy's Run, (section 4.1.5.1)

The key items of interest are the possible future compliance costs for ELG and CCR. These are likely potential costs in the future that should be planned for, which they appear to be in the proposal. The effect of an increased catalyst replacement schedule should be addressed in the financial analysis as well. Black & Veatch recommends clarifying the necessary replacement interval in the proforma financial analysis.

### **3.11 SUPPORT INFRASTRUCTURE**

The facility is fitted with natural draft cooling towers which typically have a robust construction and support system due to their large weight. It was not possible to inspect the cooling tower fill sections, but the cooling tower basin and intake structure were visible. The support structure is largely intact with a few areas of apparent wear of the supports with exposed rebar. The towers are subject to annual inspection by SPX. There are no repairs currently included in the capital plan, but it is likely that some replacements of fill sections and miscellaneous work on the distribution piping and supports will be needed over the next 20 years as a natural draft cooling tower life of this type is typically 40-50 years. Fan replacements are not an issue as none are needed with this technology. The facility tanks, materials handling equipment, and building enclosures appeared to be well maintained.

### **3.12 EASE OF INTEGRATION**

The primary control systems at the Pleasants Power Station are the Distributed Control System (DCS), the Turbine Control System (TBS) and the Voltage Regulator (VR) Control System. There are other smaller control systems which are primarily PLC based. These smaller control systems were not reviewed and are not considered to be major issues if they malfunction or need to be replaced.

#### **3.12.1 Distributed Control System**

The DCS on both units at Pleasants Power Station are Emerson Ovation version 3.3.1 and were last updated in 2010. This system is used to control and monitor the majors systems on the boilers, the air quality control systems and the water treatment system. The system also provides the controls for the safety systems on the boiler. This DCS has a total of 30 redundant controllers which are used for Unit 1, Unit 2, and Common systems at the plant. The power for this system is supplied by a battery backed up uninterruptable power supply to insure continued operation of this system in the event of a power loss.

The DCS provides the operator with operational information about the plant equipment provides automatic control functions, and collects data from the process. The DCS provides process data that is available for operator reference. In the longer run, data is transferred to an OSIsoft PI data historian system. The data from the PI system is archived at a corporate level within FirstEnergy.

The Ovation system is a widely used control system which is still supported by Emerson. The plant reports continuing support from Emerson both on the system software and hardware. The system has built in redundancy and has redundant power supplies. It is likely that it will be possible to maintain this system in a fully functional condition for a number of years into the future.

#### **3.12.2 Turbine Control System**

The TBS on both units at Pleasants Power Station are the Siemens SPPA-T3000 control system. These systems were installed in 2006 and 2007 on Units 2 and 1 respectively. The TBS is responsible for the operational control, safety systems and control of auxiliary equipment for the turbine/generator. These systems have backed up power systems to insure continued operation of this system in the event of a power loss.



The SPPA-T3000 system is still supported by Siemens and the plant personnel report no problems maintaining these systems. The SPPA-T3000 is a widely used and reliable control system. It is likely that it will be possible to maintain this system in a fully functional condition for a number of years into the future.

### **3.12.3 Voltage Regulator Control System**

The Automatic Voltage Regulator (AVR) is used to control the output voltage of the generator, insure stable operation of the generator, and provides safety systems which protect the generator from damage. The Voltage Regulator Control Systems at Pleasants Power Station are the Siemens SIMADYN D system. These systems were installed in 2002 and 2003 on Units 2 and 1 respectively. Plant personnel report that these systems are operating reliably and they have no reason to believe that there will be any problem maintaining these systems for the foreseeable future.

### **3.12.4 Compatibility**

It is not possible for Black & Veatch to comment on the compatibility of these control systems with the systems at other plants from a spare parts and maintainability stand point because no information was provided for the systems being used at the other plants.

## 4.0 Reference Data

The following table includes a complete reference listing for the Technical Review.

NUMBER	DESCRIPTION	ISSUED BY	DATE
1	Request for Proposals for Power Generation Facilities and/or Demand Resources	MonPower	12/16/2016
2	Response to Monongahela Power Company Request for Proposals for Power Supply Generation Facilities and/or Demand Resources	Allegheny Energy Supply, Co. LLC	Undated
3	Unit-Specific Minimum Operating Parameters for Capacity Performance and Base Capacity Resources.	PJM	9/16/2016
4	Thermal Cycle Heat Balance, Pleasants Power Station U1&2	Kraftwerk Union	8/10/1993
5	AES Response_MonPwer_RFP_Information_Form_Addendum.xls	Allegheny Energy Supply, Co. LLC	Undated
6	Fossil Generation Program – Major Component Integrity Assurance Program – Appendix I – Flow Accelerated Corrosion Procedure	First Energy	Undated
7	Pleasants Bulk Material System – Coal, Dwg. No. 6056-F-213504-C	Allegheny Energy Supply, Co. LLC	Undated
8	Pleasants / Willow Island Region Bulk Material Handling Lime Handling Layout	Allegheny Energy Supply, Co. LLC	Undated
9	Fossil Generation – Daily Maintenance Program	First Energy	10/1/2012
10	Fossil Generation Program - Reliability Based Maintenance Program	First Energy	4/1/2013
11	Pleasants Power Station Key Single Line Diagram Dwg. No. 6056-F-310000	Allegheny Energy Supply, Co. LLC	Undated
12	Equipment Data Sheet - Steam Turbine Generator	Allis-Chalmers	Undated
13	Equipment Data Sheet – Cooling Tower		Undated
14	Equipment Data Sheet – Boiler Feed Pump		Undated
15	Equipment Data Sheet – Boiler Feed Pump	Delaval	10/1977

NUMBER	DESCRIPTION	ISSUED BY	DATE
	Turbine		
16	Equipment Data Sheet - Boiler	Foster Wheeler	1977-1988
17	Equipment Data Sheet - Condenser		Undated
18	Equipment Data - Steam Turbine Generator	Allis-Chalmers	Undated
19	Boiler Performance Data Sheet	Foster Wheeler	4/1974
20	Unit 1 Boiler Outage Reports, Spring 2104	DTS Technical Consulting	4/16/2014
21	Unit 2 Boiler Outage Reports, Spring 2016	DTE Technical Consulting	5/16/2016
22	Unit 2 - Brushless Exciter Forced Outage Report	Siemens	3/8/2006
23	Unit 1 Rewind Report	Siemens Westinghouse	5/28/2004
24	#1 GSU Repair Report	Colt	Undated
25	Unit 1 Aux LV Bushing Leak Repair Record		Undated
26	Unit 1 GSU Cooler Leak Repair Record		Undated
27	Auxiliary 22 Transformer Repair Record		Undated
28	#1 GSU Neutral Bushing Replacement Repair Record		Undated
29	#2 GSU Trench Bushing Replacement Repair Record		1/2016
30	#1 GSU Cooler Repair Record		6/6/2016
31	PL1 Penthouse Reports Part 1		3/27/2014
32	PL1 Penthouse Reports Part 2		4/14/2014
33	PL1 Penthouse Reports Part 3		4/12/2014
34	PL2 Penthouse Reports Part 1		8/16/2016
35	PL2 Penthouse Reports Part 2		8/16/2016
36	PL2 Penthouse Reports Part 3		8/16/2016
37	PL2 Penthouse Reports Part 4		10/8/2016
38	PL2 Penthouse Reports Part 5		3/18/2016
39	PL2 Penthouse Reports Part 6		3/16/2016

NUMBER	DESCRIPTION	ISSUED BY	DATE
40	Unit 1 Generator Inspection - 2014	Siemens	4/16/2014
41	Unit 1 – Generator Inspection - 2010	Siemens	10/9/2010
42	Unit 2 – Turbine Outage Report	Siemens	5/15/2013
43	Unit 2 – Stator Inspection Report	Siemens	3/23/2016
44	Transformer Test Results-Part 1		1/16/2014
45	Transformer Test Results-Part 2		11/8/2013
46	Transformer Test Results-Part 3		2/21/2014
47	Water Balance Diagram/Mass Balance`	URS	Undated
48	Pleasant Power Station Control Systems- Description		Undated
49	Maintenance Test Report (Breakers)	Complete Advanced Maintenance Co.	3/2013
50	5/15 kV Class – Breaker Inspection Reports (3)	Complete Advanced Maintenance Co.	3/2/2016
51	Generator Inspection Report	Siemens	7/12/2012

PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON

Case No. 17-\_\_\_\_-E-\_\_\_\_

MONONGAHELA POWER COMPANY and  
THE POTOMAC EDISON COMPANY

Petition for Approval of a Generation Resource  
Transaction and Related Relief

DIRECT TESTIMONY OF  
RAYMOND E. VALDES

March 7, 2017

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Raymond E. Valdes, and my business address is 800 Cabin Hill Drive,  
3 Greensburg, Pennsylvania 15601.

4 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

5 A. I am employed by FirstEnergy Service Company and my title is Director, Rates and  
6 Regulatory Affairs. My time is devoted to tasks performed for Monongahela Power  
7 Company ("Mon Power") and The Potomac Edison Company ("PE," and together with  
8 Mon Power, the "Companies").

9 Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND  
10 PROFESSIONAL EXPERIENCE.

11 A. I am a graduate of the University of Pittsburgh where I earned a Bachelor of Science in  
12 Electrical Engineering. I have over 26 years of experience with FirstEnergy Service  
13 Company or its predecessor companies, and have held positions of Engineer, Power  
14 Services; Engineer, Rates; Regulatory Specialist; Senior Consultant; Rates Advisor;  
15 General Manager, Retail Pricing Services; and my current position of Director, Rates and  
16 Regulatory Affairs. My current duties and responsibilities include directing the rates and  
17 regulatory activities for the Companies' West Virginia and Maryland operations.

18 Q. HAVE YOU TESTIFIED IN RATE PROCEEDINGS BEFORE REGULATORY  
19 COMMISSIONS?

20 A. Yes, I have testified in proceedings before the Public Service Commission of West  
21 Virginia ("Commission"), the Public Service Commission of Maryland, the Public

1 Utilities Commission of Ohio, the Virginia State Corporation Commission, and the  
2 Pennsylvania Public Utility Commission. I have also testified before the Pennsylvania  
3 Senate Consumer Protection and Professional Licensure Committee. My most recent  
4 testimonies before this Commission have been for the Companies' 2016 Expanded Net  
5 Energy Cost ("ENEC") filing in Case No. 16-1121-E-ENEC ("2016 ENEC Filing") and  
6 the Companies' 2016 Modernization and Improvement Plan filing in Case No. 16-1146-  
7 E-4435T.

8 Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

9 A. The purpose of my testimony is to address the following principal points regarding the  
10 Companies' proposed generation resource transaction ("Transaction") for the purchase of  
11 the Pleasants Power Station ("Pleasants"):

- 12 (1) The development of a proposed temporary surcharge ("Temporary Surcharge") to  
13 recover incremental expenses related to the proposed Transaction, including non-  
14 fuel operation and maintenance ("O&M"), depreciation, income taxes, taxes other  
15 than income taxes, and a return on the incremental rate base due to the increase in  
16 plant-in-service;
- 17 (2) The calculation of recommended reductions in the Companies' ENEC rates to  
18 reflect lower net energy costs upon closing of the Transaction; and
- 19 (3) The net effect of the combination of the Temporary Surcharge and the reduction in  
20 the ENEC rates.

1 Q. PLEASE SUMMARIZE THE PROPOSED NET OVERALL RATE IMPACT OF THE  
2 REQUEST IN THIS CASE.

3 A. The Companies are proposing an overall customer rate decrease as a result of the  
4 acquisition of Pleasants. Although the Transaction will increase customer rates through  
5 the Temporary Surcharge, that customer rate impact will be more than offset by the  
6 projected ENEC revenues to be generated from Pleasants and returned to the Companies'  
7 customers during the Temporary Surcharge period. The Companies propose a  
8 \$31,486,971 net *decrease* in rates for the 16-month period of September 1, 2017 through  
9 December 31, 2018, which is a 1.6% overall decrease. This amount is comprised of a  
10 Temporary Surcharge increase of \$148,554,241 and an ENEC decrease of \$180,041,212.  
11 Residential customers will experience a decrease of about 0.9%, while non-residential  
12 customers in the aggregate will experience a decrease of approximately 2.2%. The  
13 decrease for a residential customer using 1,000 kilowatt-hours ("kWh") per month is  
14 \$0.96 per month, which results in a decrease to \$111.52 from \$112.48 per month. Table  
15 1 shows the aggregate change by rate schedule.



Table 1

Rate Schedule	Sep 2017-Dec 2018 Revenue	Increase/ (Decrease)	% change
A & R	\$ 801,055,991	\$ (6,890,422)	-0.9%
B & G	\$ 120,110,712	\$ (1,247,861)	-1.0%
C & E	\$ 340,732,539	\$ (4,519,820)	-1.3%
CSH	\$ 4,687,419	\$ (53,690)	-1.1%
D & PH	\$ 125,076,427	\$ (2,896,161)	-2.3%
K & PP	\$ 529,814,000	\$ (15,576,238)	-2.9%
AGS	\$ 510,338	\$ 10,791	2.1%
Streetlighting	\$ 14,121,522	\$ (313,570)	-2.2%
Total	\$ 1,936,108,949	\$ (31,486,971)	-1.6%

**EXHIBITS**

Q. HAVE YOU PREPARED OR HAD PREPARED UNDER YOUR SUPERVISION  
EXHIBITS TO ACCOMPANY YOUR TESTIMONY?

A. Yes. The following exhibits, identified as Exhibits REV-1 through REV-14, accompany  
my testimony:

REV-1 is a calculation of the proposed Temporary Surcharge annual revenue  
requirement. Exhibits REV-2 through REV-8 show the development of  
components used in the calculation of the proposed Temporary Surcharge  
revenue requirement.

REV-2 shows the development of rate base.

REV-3 shows the development of the rate of return.

REV-4 shows the development of O&M expense.

1           REV-5       shows the development of depreciation and amortization expense.  
2           REV-6       shows the development of taxes other than income taxes.  
3           REV-7       shows the development of demand allocation factors.  
4           REV-8       shows the calculation of the proposed Temporary Surcharge rates effective  
5                       September 1, 2017 through December 31, 2018.  
6           REV-9       shows crossing point curves for several groupings of rate schedules.  
7           REV-10      shows the post-Transaction ENEC revenues and expenses for the period of  
8                       September 1, 2017 through December 31, 2018.  
9           REV-11      shows the calculation of the proposed incremental decrease to ENEC rates  
10                      effective September 1, 2017 through December 31, 2018 to reflect the post-  
11                      Transaction revenues and expenses shown in Exhibit REV-10.  
12          REV-12      shows the combined effect of the Temporary Surcharge and the incremental  
13                      decrease to ENEC rates, effective September 1, 2017 through December 31,  
14                      2018.  
15          REV-13      shows the calculation of the rate schedule tariff rates effective September 1,  
16                      2017.  
17          REV-14      provides the proposed revisions to the tariff sheets.

***TEMPORARY SURCHARGE***

Q. WHAT IS THE PURPOSE OF THE TEMPORARY SURCHARGE?

A. The purpose of the Temporary Surcharge is to allow the Companies to recover their expenses and earn a fair return on the investment being made to meet the Companies' increasing capacity and energy needs, from the date of Transaction closing until new base rates reflecting the full amount of the Temporary Surcharge revenue requirement are placed into effect as a result of the Companies' next base rate case. The increase in expenses and rate base as a result of the Transaction is considerable, and absent rate relief upon completion of the Transaction, the Companies would suffer financial harm and could experience a negative credit rating impact. Absent Temporary Surcharge rate relief, the Companies' West Virginia jurisdictional return on equity would decline to approximately 5%, which is insufficient. Further, the ENEC decrease (to be discussed later in my testimony) can, and should, only occur coincident with Temporary Surcharge cost recovery since it would be inappropriate and unfair to the Companies for the Commission to approve an ENEC decrease but deny Temporary Surcharge cost recovery until a future date. For these reasons, Mon Power cannot complete the Transaction unless the Temporary Surcharge recovery mechanism is approved effective upon closing of the Transaction.

Q. IS THE TEMPORARY SURCHARGE RECONCILABLE?

A. Yes. The Temporary Surcharge is designed to include a true-up to actual revenues and expenses. The true-up will occur coincident with the true-up that occurs in the

1 Companies' annual ENEC filing, with a similar review period, forecast period, rate  
2 effective period, and filing timeline. To effectuate the true-up, the Companies request  
3 Commission approval to implement deferred accounting as part of the Temporary  
4 Surcharge. The Commission has approved similar treatment for this type of surcharge in  
5 other proceedings.<sup>1</sup>

6 Q. PLEASE DESCRIBE THE DEVELOPMENT OF THE TEMPORARY SURCHARGE  
7 REVENUE REQUIREMENT.

8 A. A summary of the development of the Temporary Surcharge revenue requirement is  
9 shown in Exhibit REV-1. The calculation begins with incremental rate base of  
10 \$197,175,325 multiplied by an overall rate of return of 7.407% to yield the return on rate  
11 base of \$14,604,021. The equity portion of the return, which is based on a return on  
12 equity of 10.0%, is grossed up for income taxes using a tax factor of 39.225% to yield a  
13 pre-tax return of \$20,518,156. Incremental non-fuel O&M expense of \$65,835,948,  
14 depreciation and amortization expense of \$7,219,478, and taxes other than income tax  
15 expense of \$17,842,099 are added to the pre-tax return to yield the Temporary Surcharge  
16 annual revenue requirement of \$111,415,681.

17 Q. HOW WAS THE INCREMENTAL RATE BASE SHOWN ON EXHIBIT REV-1  
18 DETERMINED?

19 A. Incremental rate base reflects the net book value of Pleasants transferred to Mon Power  
20 from Allegheny Energy Supply Company, LLC ("AE Supply"), as well as transferred  
21 Pleasants fuel inventory and materials and supplies. Pleasants property accounts consist

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<sup>1</sup> See Case Nos. 12-1571-E-PC and 13-1272-E-PW (Commission Order dated October 7, 2013).

1 of: (a) plant-in-service of \$1,499.7 million; (b) a negative acquisition adjustment of  
2 \$582.0 million; (c) a decrease of \$745.4 million for accumulated depreciation; and (d)  
3 \$22.7 million for construction work in progress ("CWIP"), which is not included in rate  
4 base in West Virginia. The summation of these values equals \$195 million, which is  
5 equivalent to the request for proposals ("RFP") offer price of \$150 per kilowatt ("kW").<sup>2</sup>  
6 The calculation of incremental rate base is shown in Exhibit REV-2, which is comprised  
7 of amounts as of December 31, 2016.

8 Q. HOW DOES THE OFFER PRICE OF \$150 PER KW COMPARE TO THE PRICE AE  
9 SUPPLY PAID FOR PLEASANTS IN 2013?

10 A. The offer price of \$150 per kW is very low. At the time Mon Power transferred its  
11 7.69% ownership interest in Pleasants to AE Supply in October 2013, Mon Power  
12 received a fair value of \$733 per kW. This fair value included a gain on net book value.  
13 Removing the gain (which was returned to customers), the residual net book value was  
14 approximately \$506 per kW. As evident from a transaction that occurred less than four  
15 years ago, the \$150 per kW offer price for Pleasants is far less than either the \$733 per  
16 kW or \$506 per kW price for the exact same facility.

17 Q. DO THE COMPANIES PROPOSE TO UPDATE THE BOOK VALUES TO THE  
18 FINAL ACTUAL VALUES FOLLOWING THE COMPLETION OF THE  
19 TRANSACTION?

20 A. Yes. The Companies propose to update the book values used in the calculations of rate  
21 base in Exhibit REV-2. The revisions will reflect the final actual book values at the time

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<sup>2</sup> \$195 million is the result of \$150/kW multiplied by 1,300,000 kW installed capacity at Pleasants.

1 of closing of the Transaction. However, the summation of plant-in-service, the negative  
2 acquisition adjustment and CWIP, less accumulated provision for depreciation, must  
3 continue to equal \$195 million at the time of Transaction closing. Pleasants fuel  
4 inventory and materials and supplies may change (although likely not materially) from  
5 the December 31, 2016 book values and the final actual book values at the time of  
6 closing of the Transaction. Since the Temporary Surcharge is fully reconcilable, the  
7 Companies will propose to revise the Temporary Surcharge rates at the time of closing of  
8 the Transaction only if there is a material change in the return on rate base.<sup>3</sup> The rate  
9 base presented in Exhibit REV-2 is an estimate and will be replaced with actual rate base  
10 for the monthly accounting deferral entries, and presented to the Commission for review  
11 and approval during the Temporary Surcharge reconciliation filings.

12 Q. WOULDN'T IT BE EASIER IF ELECTRIC PLANT-IN-SERVICE WAS STATED AS  
13 THE OFFER PRICE OF \$195 MILLION, WITH NO AMOUNTS INITIALLY  
14 BOOKED FOR THE ACQUISITION ADJUSTMENT, ACCUMULATED PROVISION  
15 FOR DEPRECIATION AND/OR CWIP?

16 A. The Federal Energy Regulatory Commission ("FERC") requires that plant be recorded at  
17 the cost incurred by the person who first devoted the property to utility service.  
18 Therefore, all accounting entries will need to be based on historical cost rather than the  
19 \$195 million offer price for Pleasants. For Mon Power, this means that the historical cost  
20 for the Pleasants asset is recorded in FERC Account 101 (Electric Plant in Service) and

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<sup>3</sup> Although the Companies may not propose to revise the Temporary Surcharge rates upon closing of the Transaction, the actual return on rate base will be used for the monthly accounting deferral entries, and presented to the Commission for review and approval during the Temporary Surcharge reconciliation filings.

1 other property accounts as necessary, including FERC Accounts 106 (Completed  
2 Construction not Classified), 107 (CWIP), and 108 (Accumulated Provision for  
3 Depreciation). Any residual between the historical cost basis of the Pleasants asset and  
4 the purchase price would be credited to FERC Account 114 (Electric Plant Acquisition  
5 Adjustments). When all property accounts are netted together (FERC Accounts 101, 106,  
6 107, 108 and 114), the resulting net book value on the books of Mon Power is the  
7 purchase price of \$195 million.

8 Q. HOW WAS THE RATE OF RETURN ON RATE BASE OF 7.407% DEVELOPED?

9 A. The proposed capital structure of 53.527% debt and 46.473% equity is shown in Exhibit  
10 REV-3, which is identical to the values utilized in the Companies' last base rate case  
11 filing in Case No. 14-0702-E-42T ("2014 Base Rate Case"). Using a weighted average  
12 debt cost of 5.155% (also from the 2014 Base Rate Case) and a return on equity of 10.0%  
13 results in a rate of return of 7.407%.

14 Q. WHY DO YOU RECOMMEND THIS CAPITAL STRUCTURE?

15 A. The Companies' combined capital structure at December 31, 2016 is approximately  
16 51.8% debt and 48.2% equity. The incremental debt and equity activity during 2017,  
17 including the financing of this Transaction, may result in a post-Transaction capital  
18 structure with a higher percentage of equity than the 46.473% from the 2014 Base Rate  
19 Case. Thus, maintaining the capital structure from the 2014 Base Rate Case will result in  
20 a slight benefit to customers versus the post-Transaction capital structure.

1 Q. WHY DO YOU RECOMMEND THE WEIGHTED AVERAGE DEBT RATE FROM  
2 THE 2014 BASE RATE CASE?

3 A. The financing of the Transaction is still to be determined. Utilizing the weighted average  
4 debt rate from the 2014 Base Rate Case is recommended as it aligns with the  
5 recommended capital structure (also from the 2014 Base Rate Case).

6 Q. WHAT ARE POSSIBLE OPTIONS TO FINANCE THE TRANSACTION?

7 A. Mon Power has various options for financing the Transaction. Potential financing  
8 options include the use of a combination of long term debt, equity from Mon Power's  
9 parent, FirstEnergy Corp., or directly from Mon Power's cash sources and/or short term  
10 debt. At the effective date of the Transaction, Mon Power could also potentially assume  
11 a \$142 million pollution control note secured by certain Pleasants assets.

12 Q. WAS A RETURN ON EQUITY APPROVED IN THE 2014 BASE RATE CASE?

13 A. No. The Companies' 2014 Base Rate Case resulted in a settlement agreement, which was  
14 approved by Commission Order dated February 3, 2015. Although the settlement  
15 agreement did not specify or determine a return on equity, paragraph 13(l) of the  
16 settlement agreement set forth that the reconciliation of the Harrison Temporary  
17 Transaction Surcharge would be based on the same return on equity as specified in the  
18 August 25, 2013 Joint Stipulation in the Harrison Transaction case and approved by the  
19 Commission on October 7, 2013. That Joint Stipulation specified a return on equity of  
20 10.0% (which was subsequently reaffirmed in the Commission order approving the  
21 settlement agreement in the 2014 Base Rate Case). The Companies also included a



1 10.0% return on equity in their proposed Modernization and Improvement Plan in Case  
2 No. 16-1146-E-4435T for 2016 and 2017 capital costs, which was approved for recovery  
3 through ENEC rates in the 2016 ENEC Filing. Therefore, the Companies have utilized a  
4 return on equity of 10.0% in the determination of the rate of return for the Temporary  
5 Surcharge. The 10.0% return on equity is proposed solely within the context of the  
6 Temporary Surcharge and holds no precedential value in any future base rate cases, or  
7 other rate proceedings, where the Companies reserve their right to propose a different  
8 return on equity.

9 Q. PLEASE DISCUSS THE DEVELOPMENT OF THE INCREMENTAL NON-FUEL  
10 O&M EXPENSE.

11 A. Incremental non-fuel O&M expense is based on non-fuel O&M expense for the twelve  
12 months ended December 31, 2016, adjusted on a going-level basis. The supporting detail  
13 in Exhibit REV-4 shows the non-fuel O&M expense for Pleasants yields an incremental  
14 expense of \$65,835,948. The incremental non-fuel O&M expense is an estimate and will  
15 be replaced with actual non-fuel O&M expense for the monthly accounting deferral  
16 entries, and presented to the Commission for review and approval during the Temporary  
17 Surcharge reconciliation filings.

18 Q. HOW WAS THE INCREMENTAL DEPRECIATION AND AMORTIZATION  
19 EXPENSE CALCULATED?

20 A. The calculation of incremental depreciation and amortization expense is shown in Exhibit  
21 REV-5. The calculation begins with the Pleasants net book value of \$195 million

1 multiplied by the applicable WV-jurisdictional factor. The resultant WV-jurisdictional  
2 net book value is divided by the remaining 27-year life of Pleasants to result in an  
3 incremental annual depreciation and amortization expense of \$7,219,478.

4 The use of this annual depreciation and amortization expense necessitates the  
5 development of a depreciation rate to be applied to plant-in-service on a going forward  
6 basis. Therefore, the annual depreciation and amortization expense was divided by the  
7 net of plant-in-service and the negative acquisition adjustment, which results in an annual  
8 rate of 0.79%. The 0.79% rate is then multiplied separately by both the plant-in-service  
9 and the negative acquisition adjustment amounts to demonstrate that the separate  
10 depreciation and amortization calculations net to the overall expense of \$7,219,478.

11 The annual depreciation rate of 0.79% will be used by Mon Power for all  
12 Pleasants plant-in-service until reset in a future base rate case or other rate proceeding.  
13 Further, the Companies request that the Commission approve the amortization of the  
14 negative acquisition adjustment until it has been fully amortized. The estimated  
15 depreciation expense in Exhibit REV-5 will be replaced with actual depreciation expense  
16 (calculated from an annual rate of 0.79%) for the monthly accounting deferral entries,  
17 and presented to the Commission for review and approval during the Temporary  
18 Surcharge reconciliation filings.  
19

1 Q. HOW WERE THE INCREMENTAL TAXES OTHER THAN INCOME TAXES  
2 DETERMINED?

3 A. Incremental taxes other than income taxes included in the calculation of the Temporary  
4 Surcharge reflect actual amounts for the twelve months ended December 31, 2016,  
5 adjusted on a going-level basis, and are comprised primarily of West Virginia State  
6 Business and Occupation Tax and property taxes. The supporting detail in Exhibit REV-  
7 6 shows the taxes other than income taxes for Pleasants produce an incremental expense  
8 of \$17,842,099. The amount of taxes other than income taxes is an estimate and will be  
9 replaced with actual taxes other than income taxes accrued for the monthly accounting  
10 deferral entries, and presented to the Commission for review and approval during the  
11 Temporary Surcharge reconciliation filings.

12 Q. WHAT ALLOCATION METHODOLOGY DO YOU PROPOSE FOR THE  
13 TEMPORARY SURCHARGE REVENUE REQUIREMENT?

14 A. The Companies propose to allocate the Temporary Surcharge revenue requirement on an  
15 average twelve-coincident-peak-demand basis, using forecast demand allocation factors.  
16 These demand allocation factors are identical to the demand allocation factors utilized to  
17 determine the currently-effective ENEC rates which the Commission approved in the  
18 2016 ENEC Filing. The rationale for allocating 100% of the revenue requirement on a  
19 demand basis is because the Temporary Surcharge revenue requirement is based on  
20 investment in production plant. The development of the demand allocation factors is  
21 shown in Exhibit REV-7. Subject to Commission approval, the demand allocation

factors will be updated in future iterations of the Temporary Surcharge, coincident with the values used to determine future ENEC rates.

Q. HOW DID YOU CALCULATE THE PROPOSED TEMPORARY SURCHARGE RATES?

A. The proposed Temporary Surcharge rates for Mon Power and PE are calculated on a combined basis in the same way that ENEC and base rates are calculated, such that Mon Power and PE rates remain uniform for rate schedule combinations. A summary of the rate schedule combinations<sup>4</sup> is shown below in Table 2.

Table 2

Mon Power Rate Schedule	PE Rate Schedule	Rate Schedule Combination	Customer Classification
A	R	A & R	Residential Service
B	G	B & G	General Service
C	E	C & E	General Service
CSH	CSH	CSH	Church & School
D	PH	D & PH	Large General Service
K	PP	K & PP	Large Power Service
AGS	AGS	AGS	Alternative Generation

For rate schedules that do not have a demand charge, such as residential Rate Schedules A and R, the Temporary Surcharge is calculated as a kWh charge. The Temporary Surcharge is calculated as both a demand charge and a kWh energy charge for all other rate schedules.

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<sup>4</sup> Although street and area lighting Rate Schedules SL-P, MV, SV, EMU, MU, EM, LIT, OL, AL, MSL, SL, and Y-6 are not indicated in Table 2, this classification of customers is identified as "streetlighting." Due to the varying number of streetlighting options provided by Mon Power and PE, it is not yet practical to fully combine all streetlighting rate schedules into a single combined format.

Forecast billing units for the 16-month period of September 1, 2017 through December 31, 2018, were used in the calculation of the Temporary Surcharge rates. The development of the proposed Temporary Surcharge rates is shown in Exhibit REV-8.

Q. WHY DO RATE SCHEDULES WITH A DEMAND CHARGE ALSO HAVE A KWH ENERGY CHARGE?

A. Ideally, such rate schedules would only have a demand charge for the Temporary Surcharge. However, this was not practical. Designing the Temporary Surcharge solely on a demand charge (for applicable rate schedules) results in inequitable movement of the crossing point curves between various groupings of rate schedules. Therefore, I limited collection of 75% of the allocated Temporary Surcharge costs through demand for rate schedules with demand rates, with the remainder of the allocated costs collected through the energy rate. This 75%/25% collection in the demand rate and energy rate maintains the same general crossing point curve between various groupings of rate schedules. A similar weighting methodology between demand and energy rates was included in the 2014 Base Rate Case.

Q. WHAT IS A CROSSING POINT CURVE?

A. A crossing point curve is the point where customer usage results in two different rate schedules being equal in amounts billed. Customer usage that varies from the crossing point curve results in one rate schedule being favorable as compared to another rate schedule. There is a crossing point curve between Rate Schedules B & G and Rate Schedules C & E, and a separate crossing point curve between Rate Schedules C & E and

1 Rate Schedules D & PH.<sup>5</sup> As illustrated in Exhibit REV-9, the area above and below the  
2 curve results in billing that is more advantageous for the indicated rate schedule  
3 combination. Therefore, I have attempted to balance the demand and energy charges so  
4 that a similar crossing point curve exists before and after the proposed Temporary  
5 Surcharge.

6 Q. WHY IS A 16-MONTH PERIOD USED INSTEAD OF A 12-MONTH PERIOD?

7 A. As I mentioned earlier in my testimony, the Temporary Surcharge is proposed to follow  
8 the same filing timeline as ENEC rates. Since existing ENEC rates are established  
9 through December 31, 2018, the Temporary Surcharge is designed to follow an identical  
10 period so that rates established as of the requested effective date of September 1, 2017  
11 would remain in effect through December 31, 2018, with any future rate changes  
12 effective January 1, 2019.

13 Q. HOW LONG WILL THE TEMPORARY SURCHARGE BE IN EFFECT?

14 A. The Temporary Surcharge would terminate at such time as new base rates reflecting the  
15 full amount of the Temporary Surcharge revenue requirements are placed into effect as a  
16 result of the Companies' next base rate case. The Companies request that the  
17 Commission, in its order in this case, provide rate assurance that the increase in assets  
18 associated with the Transaction will not be reconsidered in a base rate case. While the  
19 appropriate levels of expense and overall return on rate base can be debated and may be  
20 updated in a base rate case, the Companies' investment in the Transaction is squarely at

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<sup>5</sup> There is no crossing point curve between Rate Schedules D & PH and Rate Schedules K & PP since billing on Rate Schedules K & PP is advantageous for all load levels once rate schedule availability conditions have been met by the customer.

1 issue in this case, and the Companies are requesting that the Commission make a final  
2 determination in this matter. For this reason, the Companies believe it would be  
3 inappropriate for that same determination to be called into question in a subsequent base  
4 rate case. Such an outcome would effectively deny rate recovery that the Commission  
5 had previously approved. Mon Power cannot complete the Transaction without  
6 Commission approval of the Temporary Surcharge and the assurance that subsequent  
7 Transaction-related investment will be fully recognized in base rates in the ensuing rate  
8 case and thereafter.

9  
10 ***ADJUSTMENTS TO ENEC RATES***

11 Q. WHAT EFFECT WILL THE TRANSACTION HAVE ON NET ENERGY COSTS  
12 RECOVERED THROUGH THE ENEC MECHANISM?

13 A. The Transaction is anticipated to increase the Companies' forecasted capacity market  
14 revenues and energy market revenues, both of which serve to lower costs through the  
15 ENEC mechanism. The Companies' additional energy revenues will be reduced  
16 somewhat by the cost of fuel needed to produce the additional energy. The net result is a  
17 projected 16-month reduction to net energy costs of \$180,041,212. This savings will be  
18 passed on to customers upon approval of the Transaction. Stated differently, the  
19 Companies project ENEC rates to over-recover costs upon completion of the Transaction  
20 unless there is an incremental reduction to ENEC rates.

1 Q. WHAT DO YOU PROPOSE WITH REGARD TO ENEC RATES?

2 A. The Companies propose an incremental reduction to the ENEC rates upon closing of the  
3 Transaction, coincident and contingent upon implementation of the Temporary  
4 Surcharge. The incremental ENEC rate reduction of \$180,041,212 will more than offset  
5 the \$148,554,241 increase associated with the Temporary Surcharge, and result in an  
6 overall *decrease* in rates of \$31,486,971 during the 16-month period of September 1,  
7 2017 through December 31, 2018. The proposed incremental decrease to ENEC rates is  
8 shown in Exhibit REV-11.

9 Q. PLEASE EXPLAIN HOW THE PROPOSED ENEC RATE REDUCTION WAS  
10 DEVELOPED.

11 A. The proposed ENEC rate reduction was developed using identical allocations and  
12 forecasts used to develop the currently effective ENEC rates approved by the  
13 Commission in the 2016 ENEC Filing for rates effective January 1, 2017. For this filing,  
14 the ENEC model was adjusted to add Pleasants revenue and expense beginning  
15 September 1, 2017, with the revenue and expense effect on the ENEC shown in Exhibit  
16 REV-10. The incremental forecasted net energy costs for the period of September 1,  
17 2017 through December 31, 2018 were allocated to the rate schedules using identical  
18 allocators used in the 2016 ENEC Filing, but divided by September 1, 2017 through  
19 December 31, 2018 billing units. Exhibit REV-11 shows the calculation of the  
20 incremental ENEC rate decrease to return the additional \$180,041,212 over the period of  
21 September 1, 2017 through December 31, 2018 should the Commission approve the



1 Transaction which expressly includes the Temporary Surcharge. The incremental ENEC  
2 rate decrease is combined with the Temporary Surcharge rates to yield the net effect on  
3 rates effective September 1, 2017, as shown in Exhibit REV-12.

4 Q. HOW WILL THE TEMPORARY SURCHARGE AND INCREMENTAL ENEC RATE  
5 DECREASE BE REFLECTED IN THE TARIFF?

6 A. ENEC rates are currently added to the base portion of rates, with the combined effect  
7 shown in the various rate schedules within the tariff. In other words, the ENEC rate is  
8 not separately identified in the tariff. Similarly, the incremental ENEC rate decrease will  
9 be deducted from current rates, which for tariff presentation purposes results in a  
10 combined rate schedule rate (albeit a lower rate than would otherwise occur absent the  
11 Transaction).

12 The Temporary Surcharge by its nature is temporary until new base rates  
13 reflecting the full amount of the Temporary Surcharge revenue requirement are placed  
14 into effect as a result of the Companies' next base rate case. Therefore, there is little  
15 need to have a separately-stated tariff rate for the Temporary Surcharge. Instead, the  
16 Companies propose to follow a similar tariff presentation methodology used for ENEC  
17 rates, whereby the Temporary Surcharge rate is added to rates to result in a combined rate  
18 schedule rate.

1 Q. HAVE YOU PREPARED AN EXHIBIT ILLUSTRATING THE PROPOSAL TO  
2 COMBINE THE RATES?

3 A. Yes. Exhibit REV-13 shows the pieces of the current base portion of rates, the current  
4 ENEC rate, the Temporary Surcharge, and the incremental ENEC rate decrease as a  
5 result of this Transaction. The summation of these pieces is also shown on the updated  
6 tariff sheets provided in Exhibit REV-14.

7 Q. HOW DOES THE COMPANIES' PROPOSAL AFFECT THE CURRENT ENEC  
8 RATES APPROVED BY THE COMMISSION AND EFFECTIVE THROUGH  
9 DECEMBER 31, 2018?

10 A. Functionally, the current ENEC rates remain unchanged and identical to the values  
11 approved by the Commission in the 2016 ENEC Filing. The Companies have simply  
12 *determined an incremental ENEC rate decrease specifically attributable to the*  
13 Transaction, which does not affect the basis and parameters used to calculate the current  
14 ENEC rates.

15 Q. WILL THE COMPANIES TRACK THE TEMPORARY SURCHARGE REVENUES  
16 AND EXPENSES AS WELL AS THE ENEC REVENUES AND EXPENSES, FOR  
17 RECONCILIATION PURPOSES?

18 A. Yes. The Companies will calculate Temporary Surcharge revenues using a methodology  
19 similar to the calculation of ENEC revenues. Temporary Surcharge costs will be  
20 separately identifiable, so the comparison of Temporary Surcharge revenues to costs can  
21 be included in the monthly accounting deferral entries. The Companies already have a

1 well-established process for determining ENEC revenues and expenses. As a result, the  
2 Companies will include the ENEC effect of the Transaction within the ENEC revenue  
3 calculation and expense tracking process for monthly accounting deferral entries as of the  
4 closing of the Transaction.

5 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

6 A. Yes, it does.

## EXHIBIT REV-1

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Calculation of Temporary Surcharge**

<u>Line</u>			
(1)	Rate Base	<i>Exhibit REV-2</i>	\$ 197,175,325
(2)	Rate of Return	<i>Exhibit REV-3</i>	<u>7.407%</u>
(3)	Return Component on Plant-in-Service	<i>Line 1 x Line 2</i>	\$ 14,604,021
(4)	Rate Base financed by Equity	<i>Line 1 x 46.473%</i>	91,633,289
(5)	Return on Rate Base financed by Equity	<i>Line 4 x 10.0%</i>	9,163,329
(6)	Return Grossed Up for Taxes	<i>Line 5 / (1-39.225%)</i>	15,077,464
(7)	Income Taxes	<i>Line 6 - Line 5</i>	<u>5,914,135</u>
(8)	Pre-Tax Return Requirement	<i>Line 3 + Line 7</i>	\$ 20,518,156
(9)	O&M	<i>Exhibit REV-4</i>	65,835,948
(10)	Depreciation and Amortization	<i>Exhibit REV-5</i>	7,219,478
(11)	Taxes Other Than Income	<i>Exhibit REV-6</i>	17,842,099
(12)	Annual Revenue Requirement	<i>Lines 8+9+10+11</i>	<u>\$ 111,415,681</u>

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Incremental Rate Base**  
**As of December 31, 2016**

FERC Acct		Total Company	Allocation		WV-Jurisdictional
			Name	Factor	
		(1)	(2)	(3)	(4)=(1) x (3)
Pleasants Power Station					
101/106	Electric Plant-in-Service	\$ 1,499,714,245	GP10	0.99962	\$ 1,499,144,354
114	Electric Plant Acquisition Adjustment	(582,012,580)	GP10	0.99962	(581,791,415)
108	Accumulated Provision for Depreciation	(745,369,964)	GP10	0.99962	(745,086,723)
151	Fuel Stock	18,073,538	GP10	0.99962	18,066,670
154	Materials and Supplies	<u>6,845,040</u>	GP10	0.99962	<u>6,842,439</u>
Increase in Rate Base		<u>\$ 197,250,279</u>			<u>\$ 197,175,325</u>

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Rate of Return**

	Percent To Total (1)	Cost Rate (2)	Weighted Cost (3)=(1) x (2)
Long-Term Debt	53.527%	5.155%	2.759%
Short-Term Debt	0.000%	0.000%	0.000%
Preferred Stock	0.000%	0.000%	0.000%
Common Equity	46.473%	10.000%	4.647%
<b>TOTAL</b>	<b>100.000%</b>		<b>7.407%</b>

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Incremental Non-Fuel Operations and Maintenance Expense**  
**12 Months Ending December 31, 2016**

G/L Acct	Description	Total Company	Allocation		WV-Jurisdictional
			Name	Factor	
		(1)	(2)	(3)	(4)=(1) x (3)
<b>Pleasants Power Station</b>					
500000	Operation Supervision and Engineering	\$ 1,161,470	GP10	0.99962	\$ 1,161,029
502000	Steam Expenses (Major Only)	10,527,876	GP10	0.99962	10,523,875
505000	Electric Expense (Major Only)	60,545	GP10	0.99962	60,522
506000	Miscellaneous Steam Power Expenses (Major Only)	2,215,876	GP10	0.99962	2,215,034
508000	Operating Supplies and Expenses	704	GP10	0.99962	703
510000	Maintenance Supervision and Eng (Major Only)	5,856,358	GP10	0.99962	5,854,132
511000	Maintenance of Structures (Major Only)	69,466	GP10	0.99962	69,440
512000	Maintenance of Boiler Plant (Major Only)	31,696,137	GP10	0.99962	31,684,092
513000	Maintenance of Electric Plant (Major Only)	3,458,997	GP10	0.99962	3,457,683
514000	Maintenance of Misc Steam Plant (Major Only)	1,774,436	GP10	0.99962	1,773,762
549000	Other Production Miscellaneous Other Power Expense	357,716	GP10	0.99962	357,581
920000	Administrative and General Salaries	1,764,924	GP01	0.99795	1,761,306
921000	Office Supplies and Expenses	(686,077)	GP01	0.99795	(684,670)
923000	Outside Services Employed	5,011,281	Direct	1.00000	5,011,281
926100	Employee Pensions and Benefits	2,449,140	TX60	0.99920	2,447,180
930200	Miscellaneous General Expenses	(478,996)	Direct	1.00000	(478,996)
935000	Maintenance of General Plant	623,271	GP01	0.99795	621,993
<b>Increase in Annual Non-Fuel O&amp;M Expense</b>		<b>\$ 65,863,125</b>			<b>\$ 65,835,948</b>

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Incremental Depreciation and Amortization Expense**

Line	Pleasants Power Station		
(1)	Net Book Value	*	\$ 195,000,000
(2)	West Virginia Jurisdictional Allocator	Exhibit REV-2	0.99962
(3)	West Virginia Jurisdictional Net Book Value	Line 1 x Line 2	\$ 194,925,900
(4)	Pleasants Power Station Remaining Life (years)		27
(5)	Depreciation and Amortization Expense	Line 3 / Line 4	<u>\$ 7,219,478</u>
<hr/>			
Line	Depreciation and Amortization Rate		
(6)	Electric Plant-in-Service	Exhibit REV-2	\$ 1,499,144,354
(7)	Electric Plant Acquisition Adjustment	Exhibit REV-2	\$ (581,791,415)
(8)	Net	Line 6 + Line 7	\$ 917,352,939
(9)	Resultant Depreciation and Amortization Rate	Line 5 / Line 8	0.79%
<hr/>			
Line	Depreciation		
(10)	Electric Plant-in-Service	Line 6	\$ 1,499,144,354
(11)	Depreciation Rate	Line 9	0.79%
(12)	Depreciation Expense	Line 10 x Line 11	<u>\$ 11,798,120</u>
<hr/>			
Line	Amortization		
(13)	Electric Plant Acquisition Adjustment	Line 7	\$ (581,791,415)
(14)	Amortization Rate	Line 9	0.79%
(15)	Amortization	Line 13 x Line 14	<u>\$ (4,578,642)</u>
<hr/>			
Line	Depreciation and Amortization		
(16)	Depreciation and Amortization Expense**	Line 12 + Line 15	<u>\$ 7,219,478</u>

\*Calculated as \$150/kW RFP offer price x 1,300,000 kW installed capacity at Pleasants

\*\*Equal to Line 5



**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Incremental Taxes Other Than Income Taxes**  
**12 Months Ending December 31, 2016**

G/L Acct	Description	Total Company	Allocation		WV-Jurisdictional
			Name	Factor	
		(1)	(2)	(3)	(4)=(1) x (3)
Pleasants Power Station					
408114	TxOthIncSales&Use	\$ (12,164)	GP01	0.99795	\$ (12,139)
408306	Txes Oth WVA B&O	11,744,166	Direct	1.00000	11,744,166
664220	TxOthIncWVProperty	4,534,618	GP01	0.99795	4,525,322
408100	TxOthInc-Labor Related	1,586,018	TX60	0.99920	1,584,749
Increase in Annual Taxes Other Than Income Taxes		<u>\$ 17,852,639</u>			<u>\$ 17,842,099</u>

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Demand Allocation Factors**

D1 Demand: Based on 3-year average of total WV coincident peaks and adjusted to the forecast period using a 3-year average load factor

Rate Schedule	ACP Demand @ Generation Level		
	2013	2014	2015
A & R	1,093,633	1,129,084	1,146,159
B & G	137,299	138,065	137,131
C & E	457,341	453,358	455,572
CSH	7,429	7,159	7,122
D & PH	156,615	150,130	144,007
K & PP	551,055	598,809	623,476
AGS	-	108	473
St Lighting	3,702	2,707	2,220
<b>TOTAL</b>	<b>2,407,074</b>	<b>2,479,419</b>	<b>2,516,160</b>

Rate Schedule	Energy @ Generation Level			
	2013	2014	2015	Fcst 2017
A & R	5,978,902	6,103,291	5,968,711	5,901,826
B & G	807,854	813,609	802,057	787,252
C & E	2,693,377	2,736,487	2,763,906	2,700,705
CSH	39,237	41,904	39,493	40,103
D & PH	1,232,562	1,113,980	1,098,016	1,119,131
K & PP	4,192,392	4,984,182	5,238,678	5,597,478
AGS	4,496	1,662	2,452	1,220
St Lighting	64,852	64,325	65,680	64,666
<b>TOTAL</b>	<b>15,013,672</b>	<b>15,859,441</b>	<b>15,978,993</b>	<b>16,212,382</b>

Rate Schedule	Average Demand @ Generation Level (Average Demand = Energy / 8,760 Hours per Year)			
	2013	2014	2015	Fcst 2017
A & R	682.5	696.7	681.4	673.7
B & G	92.2	92.9	91.6	89.9
C & E	307.5	312.4	315.5	308.3
CSH	4.5	4.8	4.5	4.6
D & PH	140.7	127.2	125.3	127.8
K & PP	478.6	569.0	598.0	639.0
AGS	0.5	0.2	0.3	0.1
St Lighting	7.4	7.3	7.5	7.4

Rate Schedule	Load Factor (Load Factor = Average Demand / ACP Demand)				ACP Demand*	Demand Allocation Factor**
	2013	2014	2015	3 Yr Average		
A & R	62.4%	61.7%	59.4%	61.2%	1,101,079	0.43475
B & G	67.2%	67.3%	66.8%	67.1%	133,995	0.05291
C & E	67.2%	68.9%	69.3%	68.5%	450,314	0.17780
CSH	60.3%	66.8%	63.3%	63.5%	7,213	0.00285
D & PH	89.8%	84.7%	87.0%	87.2%	146,516	0.05785
K & PP	86.8%	95.0%	95.9%	92.6%	690,087	0.27248
AGS	0.0%	0.0%	59.2%	19.7%	706	0.00028
St Lighting	200.0%	271.3%	337.7%	269.7%	2,737	0.00108
					<b>2,532,648</b>	<b>1.00000</b>

\*ACP Demand = Fcst 2017 Average Demand / 3 Yr Average Load Factor

\*\*Identical to factors in Exhibit REV-18 of 2016 ENEC Proceeding at Case No. 16-1121-E-ENEC

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Temporary Surcharge Rate Design**  
**September 1, 2017 through December 31, 2018**

Annual Rev Requirement\*   \$   111,415,681  
 16-Month Rev Requirement   \$   148,554,241   = (Annual Revenue Requirement / 12) x 16

Rate Schedule	Demand Allocator Factor** (1)	Allocated 16-Month Revenue Requirement (2)=(1) x (2) Total	Forecasted kW-kVA Demand at Meter Level (3)	Forecasted kWh Energy Sales at Meter Level (4)	Proposed Demand Rate \$/ kW-kVA (5)=75% of (2) / (3)	Proposed Energy Rate \$/ kWh (6)=remainder of (2) / (4)
A & R	0.43475	\$   64,584,590		7,197,035,687		0.00897
B & G	0.05291	7,859,576		960,457,491		0.00818
C & E	0.17780	26,413,490	9,741,694	3,311,190,827	\$       2.03	0.00199
CSH	0.00285	423,070		49,697,339		0.00851
D & PH	0.05785	8,593,998	2,957,256	1,412,180,585	2.18	0.00152
K & PP	0.27248	40,477,531	15,006,798	7,514,926,011	2.023	0.00135
AGS	0.00028	41,425	160,000	1,621,230	0.194	0.00639
St Lighting	0.00108	160,561		78,921,130		0.00203
<b>TOTAL</b>	<b>1.00000</b>	<b>\$   148,554,241</b>	<b>27,865,748</b>	<b>20,526,030,301</b>		

\*Annual Revenue Requirement per Exhibit REV-1

\*\*Demand Allocation Factors per Exhibit REV-7

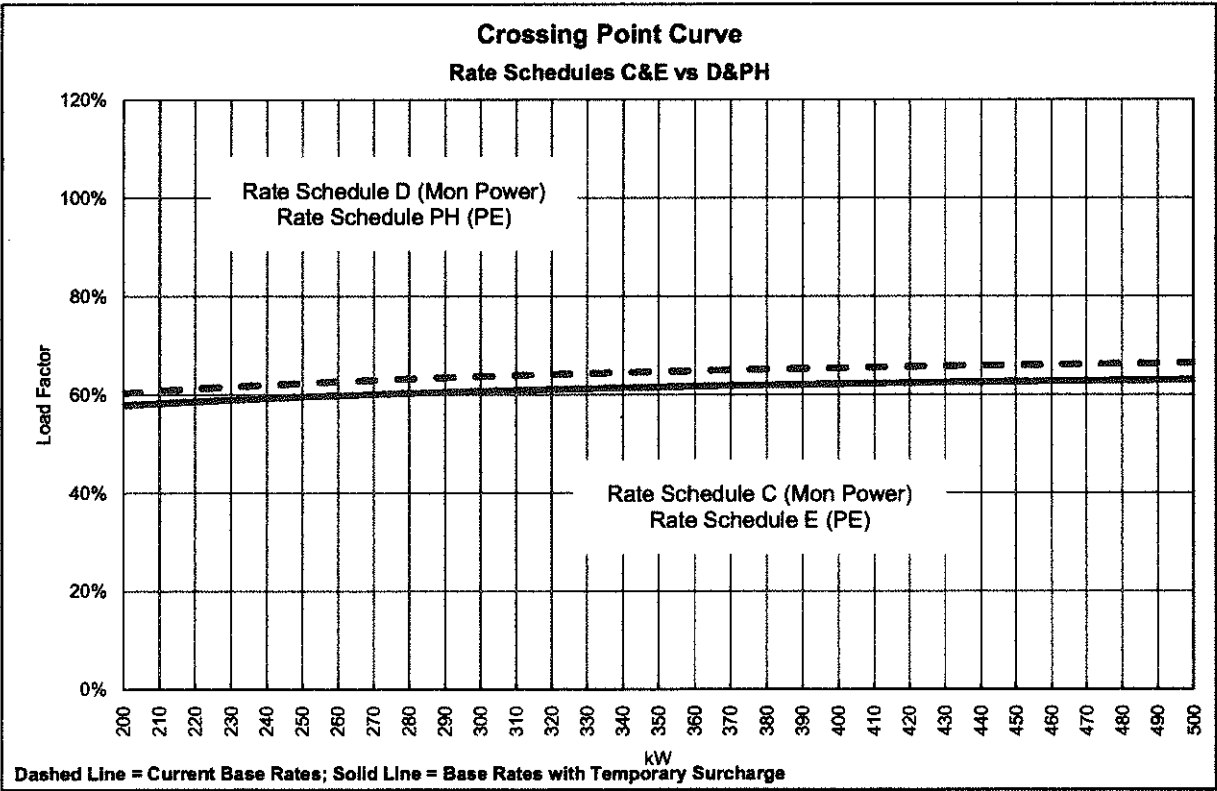
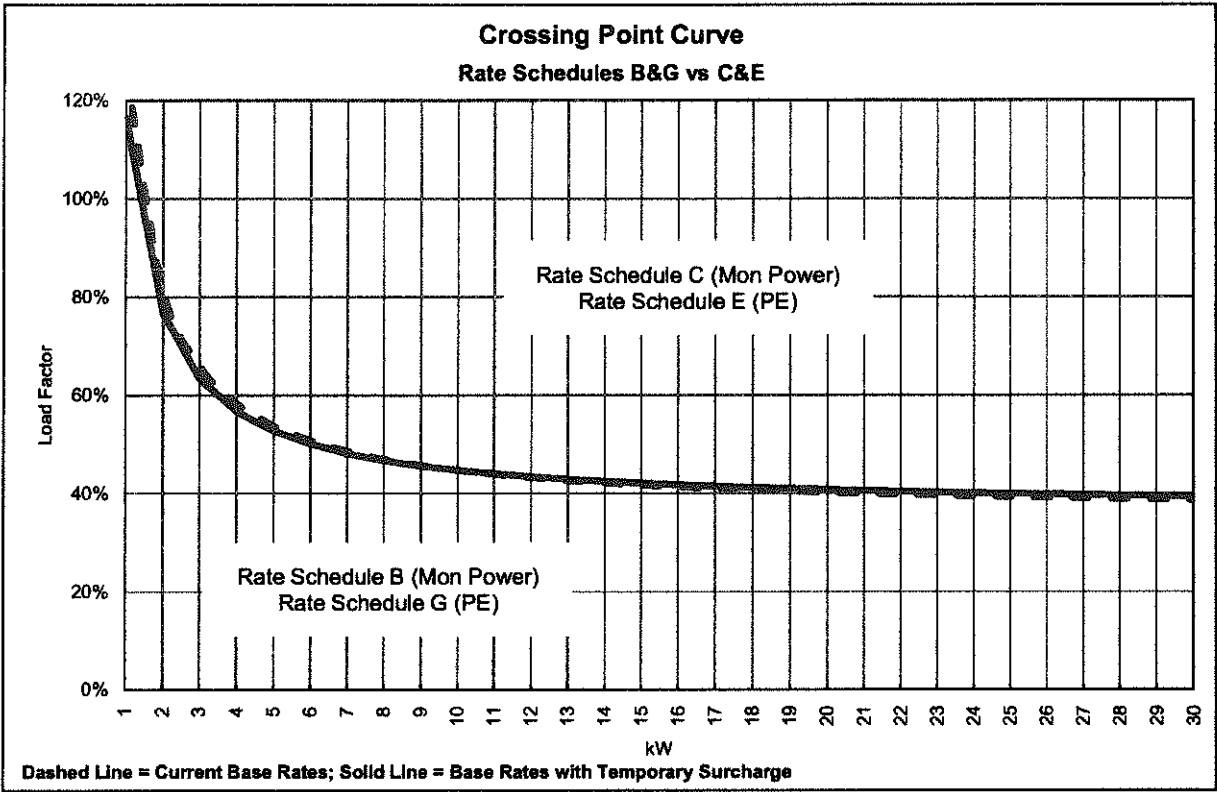


EXHIBIT REV-10

MONONGAHELA POWER COMPANY  
Incremental Expanded Net Energy Cost (ENEC)  
September 1, 2017 through December 31, 2018

	West Virginia - Total			Allocation Name		Allocation Factor		West Virginia Retail Jurisdiction		
	Demand	Energy	Total	Demand	Energy	Demand	Energy	Demand	Energy	Total
	(1)	(2)	(3)=(1) + (2)	(4)	(5)	(6)	(7)	(8)=(1) x (6)	(9)=(2) x (7)	(10)=(8) + (9)
Fuel Expense (501) and Allowances (509)										
501000 Fuel - Coal		\$ 171,009,658	\$ 171,009,658		BLU10		0.99962	\$ 170,944,674	\$ 170,944,674	
501005 Fuel - Biomass		-	-		BLU10		0.99962	-	-	-
501050 Fuel - Lime Expense		33,282,537	33,282,537		BLU10		0.99962	33,269,890	33,269,890	
501051 Fuel - Sludge Stabilizer Expense		-	-		BLU10		0.99962	-	-	-
501052 Fuel - Residual Disposal Expense		1,784,347	1,784,347		BLU10		0.99962	1,783,669	1,783,669	
501060 Fuel - Aqueous Ammonia		-	-		BLU10		0.99962	-	-	-
501061 Fuel Oil Light Off		-	-		BLU10		0.99962	-	-	-
501064 M&S Fuel-Residual Disposal CCB		5,766,476	5,766,476		BLU10		0.99962	5,764,285	5,764,285	
501065 Fuel - Urea		11,043,471	11,043,471		BLU10		0.99962	11,039,274	11,039,274	
501073 Fuel - Limestone Exp		-	-		BLU10		0.99962	-	-	-
501077 Fuel - Soda Ash		4,859,145	4,859,145		BLU10		0.99962	4,857,299	4,857,299	
501078 Fuel - Lime Stab Exp		-	-		BLU10		0.99962	-	-	-
501100 Coal Consumed Handling		10,970,614	10,970,614		BLU10		0.99962	10,966,445	10,966,445	
502000 Fuel - Oil		-	-		BLU10		0.99962	-	-	-
504000 Fuel - Natural Gas		-	-		BLU10		0.99962	-	-	-
504030 Light Off Natural Gas		705,992	705,992		BLU10		0.99962	705,724	705,724	
501020 Fuel - NOx Allowances - Seasonal		-	-		BLU10		0.99962	-	-	-
501021 Fuel - NOx Allowances - Annual		-	-		BLU10		0.99962	-	-	-
501025 Fuel - SO2 Allowances		-	-		BLU10		0.99962	-	-	-
			\$ 239,422,240							\$ 239,331,260
Power Sales (447)										
447001 Rev - SI for Resi - PJM - RPM Auction	\$ (83,941,069)		\$ (83,941,069)	BLD10		0.99962		\$ (83,909,172)		\$ (83,909,172)
447609 PJM Spot Market Energy		(355,090,352)	(355,090,352)	BLU10		0.99962		(354,955,417)	(354,955,417)	
			\$ (439,031,421)							\$ (438,864,589)
Other Electric Revenues (456)										
456008 PJM - Ancity Srv Rev	\$ (3,203,739)		\$ (3,203,739)	BLU10		0.99962		\$ (3,202,521)		\$ (3,202,521)
			\$ (3,203,739)							\$ (3,202,521)
Transmission Expenses (565)										
570031 PJM Transm Cong Chrg	\$ 22,703,265		\$ 22,703,265	BLU10		0.99962		\$ 22,694,638		\$ 22,694,638
			\$ 22,703,265							\$ 22,694,638
Incremental ENEC	\$ (83,941,069)	\$ (96,168,585)	\$ (180,109,654)					\$ (83,909,172)	\$ (96,132,041)	\$ (180,041,212)

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Incremental Expanded Net Energy Cost (ENEC) Rate**  
**September 1, 2017 through December 31, 2018**

Incremental ENEC Energy Rates

Rate Schedule	Demand Allocator Factor*	Energy Allocator Factor**	Incremental Demand-Related ENEC \$	Incremental Energy-Related ENEC \$	TOTAL Incremental ENEC \$	Forecasted kWh Energy Sales at Meter Level	Incremental Demand-Related ENEC \$ / kWh	Incremental Energy-Related ENEC \$ / kWh	TOTAL Incremental ENEC \$ / kWh
	(1)	(2)	(3)=(3)Total x (1)	(4)=(4)Total x (2)	(5)=(3) + (4)	(6)	(7)=(3) / (6)	(8)=(4) / (6)	(9)=(7) + (8)
A & R	0.43475	0.36403	\$ (36,479,870)	\$ (34,995,141)	\$ (71,475,012)	7,197,035,687	\$ (0.00507)	\$ (0.00486)	\$ (0.00993)
B & G	0.05291	0.04856	(4,439,392)	(4,668,045)	(9,107,437)	960,457,491	(0.00462)	(0.00486)	(0.00948)
C & E	0.17780	0.16658		(16,013,951)	(16,013,951)	3,311,190,827		(0.00484)	(0.00484)
CSH	0.00285	0.00247	(238,966)	(237,794)	(476,760)	49,697,339	(0.00481)	(0.00478)	(0.00959)
D & PH	0.05785	0.06903		(6,635,937)	(6,635,937)	1,412,180,585		(0.00470)	(0.00470)
K & PP	0.27248	0.34526		(33,190,497)	(33,190,497)	7,514,926,011		(0.00442)	(0.00442)
AGS	0.00028	0.00008		(7,236)	(7,236)	1,621,230		(0.00446)	(0.00446)
St Lighting	0.00108	0.00399	(90,691)	(383,440)	(474,130)	78,921,130	(0.00115)	(0.00486)	(0.00601)
Subtotal	1.00000	1.00000	\$ (41,248,920)	\$ (96,132,041)	\$ (137,380,961)	20,526,030,301			

Incremental ENEC Demand Rates

Rate Schedule	Demand Allocator Factor*	Energy Allocator Factor**	Incremental Demand-Related ENEC \$	Incremental Energy-Related ENEC \$	TOTAL Incremental ENEC \$	Forecasted kW-kVA Demand at Meter Level	Incremental Demand-Related ENEC \$ / kW-kVA	Incremental Energy-Related ENEC \$ / kW-kVA	TOTAL Incremental ENEC \$ / kW-kVA
	(1)	(2)	(3)=Total x (1)	(4)=Total x (2)	(5)=(3) + (4)	(6)	(7)=(3) / (6)	(8)=(4) / (6)	(9)=(7) + (8)
A & R	0.43475	0.36403							
B & G	0.05291	0.04856							
C & E	0.17780	0.16658	\$ (14,919,359)		\$ (14,919,359)	9,741,694	\$ (1.53)		\$ (1.53)
CSH	0.00285	0.00247							
D & PH	0.05785	0.06903	(4,854,222)		(4,854,222)	2,957,256	(1.64)		(1.64)
K & PP	0.27248	0.34526	(22,863,272)		(22,863,272)	15,006,798	(1.524)		(1.524)
AGS	0.00028	0.00008	(23,399)		(23,399)	160,000	(0.146)		(0.146)
St Lighting	0.00108	0.00399							
Subtotal	1.00000	1.00000	\$ (42,660,252)	\$ -	\$ (42,660,252)	27,865,748			
TOTAL (per Exhibit REV-9)			\$ (83,909,172)	\$ (96,132,041)	\$ (180,041,212)				

\*Demand Allocation Factors per Exhibit REV-7

\*\*Energy Allocation Factors identical to factors in Exhibit REV-18 of 2016 ENEC Proceeding at Case No. 16-1121-E-ENEC

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Calculation of Rate Change**  
**September 1, 2017 through December 31, 2018**

Rate Schedule	Temporary Surcharge*		Incremental ENEC Rate Change**		Total Rate Change	
	\$ / kW-kVA	\$ / kWh	\$ / kW-kVA	\$ / kWh	\$ / kW-kVA	\$ / kWh
	(1)	(2)	(3)	(4)	(5)=(1) + (3)	(6)=(2) + (4)
A & R		\$ 0.00897		\$ (0.00993)		\$ (0.00096)
B & G		0.00818		(0.00948)		\$ (0.00130)
C & E	\$ 2.03	0.00199	\$ (1.53)	(0.00484)	\$ 0.50	\$ (0.00285)
CSH		0.00851		(0.00959)		\$ (0.00108)
D & PH	2.18	0.00152	(1.64)	(0.00470)	0.54	\$ (0.00318)
K & PP	2.023	0.00135	(1.524)	(0.00442)	0.499	\$ (0.00307)
AGS	0.194	0.00639	(0.146)	(0.00446)	0.048	\$ 0.00193
St Lighting		0.00203		(0.00601)		\$ (0.00398)

\*Temporary Surcharge per Exhibit REV-8

\*\*Incremental ENEC Rate Change per Exhibit REV-11

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Calculation of Rate Schedule Tariff Rates**

	Existing		Proposed		TOTAL
	Base	ENEC	Temporary Surcharge	ENEC Decrease	Tariff Rate (5)=(1)+(2)+ (3)+(4)
	(1)	(2)	(3)	(4)	
<b><u>Rate Schedules A &amp; R</u></b>					
Energy Charge (kWh)					
All kWh	\$ 0.05336	\$ 0.04112	\$ 0.00897	\$ (0.00993)	\$ 0.09352
<b><u>Rate Schedules B &amp; G</u></b>					
Energy Charge (kWh)					
First Block (0-400)	\$ 0.06952	\$ 0.04146	\$ 0.00818	\$ (0.00948)	\$ 0.10968
Second Block (over 400)	\$ 0.05643	\$ 0.04146	\$ 0.00818	\$ (0.00948)	\$ 0.09659
<b><u>Rate Schedules C &amp; E</u></b>					
Demand Charge (kW)					
All kW	\$ 11.67	\$ 1.46	\$ 2.03	\$ (1.53)	\$ 13.63
Energy Charge (kWh)					
All kWh	\$ 0.01160	\$ 0.03698	\$ 0.00199	\$ (0.00484)	\$ 0.04573
<b><u>Rate Schedules CSH</u></b>					
Energy Charge (kWh)					
All kWh	\$ 0.04655	\$ 0.04086	\$ 0.00851	\$ (0.00959)	\$ 0.08633
<b><u>Rate Schedules D &amp; PH</u></b>					
Demand Charge (kW)					
First Block (0-500)	\$ 13.05	\$ 2.90	\$ 2.18	\$ (1.64)	\$ 16.49
Second Block (over 500)	\$ 11.59	\$ 2.90	\$ 2.18	\$ (1.64)	\$ 15.03
Energy Charge (kWh)					
All kWh	\$ 0.00892	\$ 0.03483	\$ 0.00152	\$ (0.00470)	\$ 0.04057
<b><u>Rate Schedules K &amp; PP</u></b>					
Demand Charge (kVA)					
First Block (0-1,000)	\$ 12.479	\$ 1.405	\$ 2.023	\$ (1.524)	\$ 14.383
Second Block (over 1,000)	\$ 10.325	\$ 1.405	\$ 2.023	\$ (1.524)	\$ 12.229
Energy Charge (kWh)					
All kWh	\$ 0.00283	\$ 0.03542	\$ 0.00135	\$ (0.00442)	\$ 0.03518
<b><u>Rate Schedules AGS</u></b>					
Demand Charge (kW)					
0-15 kV Service					
Firm Standby Power					
First Block (0-100)	\$ 6.174	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 6.400
Second Block (over 100)	\$ 5.144	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 5.370
Interruptible Standby Power					
First Block (0-100)	\$ 5.899	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 6.125
Second Block (over 100)	\$ 4.870	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 5.096
Maintenance Power					
All kW	\$ 4.870	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 5.096
15-100 kV Service					
Firm Standby Power					
First Block (0-100)	\$ 4.348	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 4.574
Second Block (over 100)	\$ 3.314	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 3.540
Interruptible Standby Power					
First Block (0-100)	\$ 4.074	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 4.300
Second Block (over 100)	\$ 3.039	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 3.265
Maintenance Power					
All kW	\$ 3.039	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 3.265
Over 100 kV Service					
Firm Standby Power					
First Block (0-100)	\$ 3.446	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 3.672
Second Block (over 100)	\$ 2.409	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 2.635
Interruptible Standby Power					
First Block (0-100)	\$ 3.172	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 3.398
Second Block (over 100)	\$ 2.135	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 2.361
Maintenance Power					
All kW	\$ 2.135	\$ 0.178	\$ 0.194	\$ (0.146)	\$ 2.361
Energy Charge (kWh)					
All kWh	\$ 0.00565	\$ 0.02448	\$ 0.00639	\$ (0.00446)	\$ 0.03206



MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY  
Calculation of Rate Schedule Tariff Rates  
Streetlighting Rate Schedules

Rate per kWh = \$ 0.04120 \$ 0.00203 \$ (0.00601)

	kWh	Existing		Proposed		TOTAL
		Base	ENEC	Temporary Surcharge	ENEC Decrease	Tariff Rate
		(1)	(2)	(3)	(4)	(5)=(1)+(2)+ (3)+(4)
<b>Rate Schedule SL-P</b>						
Sodium Vapor - Semi-Enclosed						
9,500 Lumen (100 Watt)	51	\$ 6.29	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.18
Sodium Vapor - Standard Enclosed Type						
9,500 Lumen (100 Watt)	51	\$ 6.97	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.86
22,000 Lumen (200 Watt)	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
50,000 Lumen (400 Watt)	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
Sodium Vapor - Floodlight						
22,000 Lumen (200 Watt)	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
50,000 Lumen (400 Watt)	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
Sodium Vapor - Pole Top Mounted						
9,500 Lumen (100 Watt)	51	\$ 13.64	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 15.53
Mercury Vapor						
8,150 Lumen (175 Watt)	74	\$ 7.61	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 10.37
11,500 Lumen (250 Watt)	103	\$ 8.83	\$ 4.24	\$ 0.21	\$ (0.62)	\$ 12.66
21,500 Lumen (400 Watt)	162	\$ 10.99	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 17.02
60,000 Lumen (1,000 Watt)	386	\$ 16.80	\$ 15.90	\$ 0.78	\$ (2.32)	\$ 31.16
Floodlights						
11,500 Lumen (250 Watt)	103	\$ 8.83	\$ 4.24	\$ 0.21	\$ (0.62)	\$ 12.66
21,500 Lumen (400 Watt)	162	\$ 10.99	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 17.02
60,000 Lumen (1,000 Watt)	386	\$ 16.80	\$ 15.90	\$ 0.78	\$ (2.32)	\$ 31.16
Pole-Top Mounted, 8,150 Lumen (175 Watt) M.V.						
15' Steel Pole	74	\$ 14.96	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 17.72
20' Steel Pole	74	\$ 16.32	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 19.08
14' Aluminum Pole	74	\$ 15.02	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 17.78
<b>Rate Schedule MV</b>						
Standard Semi-Enclosed						
8,150 Lumen (175 Watt)	74	\$ 7.61	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 10.37
Standard Enclosed						
11,500 Lumen (250 Watt)	103	\$ 8.83	\$ 4.24	\$ 0.21	\$ (0.62)	\$ 12.66
21,500 Lumen (400 Watt)	162	\$ 10.99	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 17.02
60,000 Lumen (1,000 Watt)	386	\$ 16.80	\$ 15.90	\$ 0.78	\$ (2.32)	\$ 31.16
Floodlights						
11,500 Lumen (250 Watt)	103	\$ 8.83	\$ 4.24	\$ 0.21	\$ (0.62)	\$ 12.66
21,500 Lumen (400 Watt)	162	\$ 10.99	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 17.02
60,000 Lumen (1,000 Watt)	386	\$ 16.80	\$ 15.90	\$ 0.78	\$ (2.32)	\$ 31.16
Pole-Top						
8,150 Lumen (175 Watt)	74	\$ 15.02	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 17.78
<b>Rate Schedule SV</b>						
Sodium Vapor - Semi-Enclosed						
9,500 Lumen (100 Watt)	51	\$ 6.29	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.18
Sodium Vapor - Standard Enclosed Type						
9,500 Lumen (100 Watt)	51	\$ 6.97	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.86
22,000 Lumen (200 Watt)	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
50,000 Lumen (400 Watt)	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
Sodium Vapor - Floodlight						
22,000 Lumen (200 Watt)	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
50,000 Lumen (400 Watt)	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
Sodium Vapor - Pole Top Mounted						
9,500 Lumen (100 Watt)	51	\$ 13.64	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 15.53
<b>Rate Schedule EMU</b>						
<b>OVERHEAD SERVICE</b>						
HPS-Vertical Open Lens Luminaire/OL						
9,500 Lumen(100 Watt)						
With Pole	51	\$ 15.98	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 17.87
9,500 Lumen(100 Watt)						
Without Pole	51	\$ 6.29	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.18
MV-Horizontal /Cobra Head						
8,150 Lumen(175 Watt)	74	\$ 7.61	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 10.37
HPS-Horizontal/Cobra Head						

MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY  
Calculation of Rate Schedule Tariff Rates  
Streetlighting Rate Schedules

Rate per kWh = \$ 0.04120 \$ 0.00203 \$ (0.00601)

	kWh	Existing		Proposed		TOTAL
		Base	ENEC	Temporary Surcharge	ENEC Decrease	Tariff Rate
						(5)=(1)+(2)+ (3)+(4)
		(1)	(2)	(3)	(4)	
9,500 Lumen(100 Watt)	51	\$ 6.97	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.86
22,000 Lumen(200 Watt)	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
50,000 Lumen(400 Watt)	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
MH-Horizontal/Cobra Head						
36,000 Lumen(400 Watt)	157	\$ 16.38	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 22.23
90,000 Lumen(1000 Watt)	379	\$ 28.71	\$ 15.61	\$ 0.77	\$ (2.28)	\$ 42.81
HPS Floodlight						
22,000 Lumen(200 Watt)	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
50,000 Lumen(400 Watt)	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
MH Floodlight						
36,000 Lumen(400 Watt)	157	\$ 16.38	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 22.23
90,000 Lumen(1000 Watt)	379	\$ 28.71	\$ 15.61	\$ 0.77	\$ (2.28)	\$ 42.81
UNDERGROUND SERVICE						
HPS Colonial Post Top 14' Mounting Hgt						
9,500 Lumen(100 Watt)	51	\$ 13.64	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 15.53
MV Colonial Post Top 14' Mounting Hgt						
11,600 Lumen(175 Watt)	74	\$ 17.86	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 20.62
HPS Cobra Head/30' Mounting Hgt						
Single Luminaire Per Pole:						
9,500 Lumen(100 Watt)	51	\$ 22.69	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 24.58
22,000 Lumen(200 Watt)	86	\$ 25.22	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 28.41
50,000 Lumen(400 Watt)	167	\$ 29.06	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 35.28
Each Add'l Luminaire Per Pole:						
9,500 Lumen(100 Watt)	51	\$ 6.97	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.86
22,000 Lumen(200 Watt)	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
50,000 Lumen(400 Watt)	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
MH Horizontal Cobra Head/30' Mounting Hgt						
Single Luminaire Per Pole:						
36,000 Lumen(400 Watt)	157	\$ 32.11	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 37.96
90,000 Lumen(1000 Watt)	379	\$ 44.44	\$ 15.61	\$ 0.77	\$ (2.28)	\$ 58.54
Each Add'l Luminaire Per Pole:						
36,000 Lumen(400 Watt)	157	\$ 16.38	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 22.23
90,000 Lumen(1000 Watt)	379	\$ 28.71	\$ 15.61	\$ 0.77	\$ (2.28)	\$ 42.81
HPS-Shoe Box/30' Mounting Hgt						
With Base:						
9,500 Lumen(100 Watt)	51	\$ 32.74	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 34.63
22,000 Lumen(200 Watt)	86	\$ 33.92	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 37.11
50,000 Lumen(400 Watt)	167	\$ 36.09	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 42.31
No Base:						
9,500 Lumen(100 Watt)	51	\$ 25.71	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 27.60
22,000 Lumen(200 Watt)	86	\$ 26.89	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 30.08
50,000 Lumen(400 Watt)	167	\$ 29.06	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 35.28
Each Add'l Luminaire Per Pole:						
9,500 Lumen(100 Watt)	51	\$ 14.01	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 15.90
22,000 Lumen(200 Watt)	86	\$ 15.19	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 18.38
50,000 Lumen(400 Watt)	167	\$ 17.35	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 23.57
OVERHEAD SERVICE						
MH Shoe Box/30' Mounting Hgt						
With Base:						
36,000 Lumen(400 Watt)	157	\$ 38.64	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 44.49
No Base:						
36,000 Lumen(400 Watt)	157	\$ 31.63	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 37.48
Each Add'l Luminaire Per Pole:						
36,000 Lumen(400 Watt)	157	\$ 19.93	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 25.78
MH Shoe Box/40' Mounting Hgt						
No Base:						
90,000 Lumen(1000 Watt)	379	\$ 49.47	\$ 15.61	\$ 0.77	\$ (2.28)	\$ 63.57
Each Add'l Luminaire Per Pole:						
90,000 Lumen(1000 Watt)	379	\$ 33.34	\$ 15.61	\$ 0.77	\$ (2.28)	\$ 47.44

MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY  
Calculation of Rate Schedule Tariff Rates  
Streetlighting Rate Schedules

Rate per kWh = \$ 0.04120 \$ 0.00203 \$ (0.00601)

	kWh	Existing		Proposed		TOTAL
		Base	ENEC	Temporary Surcharge	ENEC Decrease	Tariff Rate
		(1)	(2)	(3)	(4)	(5)=(1)+(2)+ (3)+(4)
<b>Rate Schedule MU</b>						
<b>HPS Vapor</b>						
Customer Owned Pole:						
9,500 Lumen(100 Watt)	51	\$ 3.76	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 5.65
22,000 Lumen(200 Watt)	86	\$ 4.80	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 7.99
50,000 Lumen(400 Watt)	167	\$ 7.19	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 13.41
Company Distr. System:						
9,500 Lumen(100 Watt)	51	\$ 4.87	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 6.76
22,000 Lumen(200 Watt)	86	\$ 5.91	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 9.10
50,000 Lumen(400 Watt)	167	\$ 8.30	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 14.52
<b>Mercury Vapor</b>						
Customer Owned Pole:						
8,150 Lumen(175 Watt)	74	\$ 4.33	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 7.09
11,500 Lumen(250 Watt)	103	\$ 5.28	\$ 4.24	\$ 0.21	\$ (0.62)	\$ 9.09
21,500 Lumen(400 Watt)	162	\$ 6.02	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 12.05
60,000 Lumen(1000 Watt)	386	\$ 11.47	\$ 15.90	\$ 0.78	\$ (2.32)	\$ 25.83
Company Distr. System:						
8,150 Lumen(175 Watt)	74	\$ 5.45	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 8.21
11,500 Lumen(250 Watt)	103	\$ 6.35	\$ 4.24	\$ 0.21	\$ (0.62)	\$ 10.18
21,500 Lumen(400 Watt)	162	\$ 7.12	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 13.15
60,000 Lumen(1000 Watt)	386	\$ 12.58	\$ 15.90	\$ 0.78	\$ (2.32)	\$ 26.94
<b>Metal Halide</b>						
Customer Owned Pole:						
11,600 Lumen(175 Watt)	74	\$ 5.64	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 8.40
15,000 Lumen(250 Watt)	103	\$ 6.70	\$ 4.24	\$ 0.21	\$ (0.62)	\$ 10.53
36,000 Lumen(400 Watt)	157	\$ 8.20	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 14.05
90,000 Lumen(1000 Watt)	379	\$ 15.83	\$ 15.61	\$ 0.77	\$ (2.28)	\$ 29.93
Company Distr. System:						
11,600 Lumen(175 Watt)	74	\$ 6.74	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 9.50
15,000 Lumen(250 Watt)	103	\$ 7.80	\$ 4.24	\$ 0.21	\$ (0.62)	\$ 11.63
36,000 Lumen(400 Watt)	157	\$ 9.31	\$ 6.47	\$ 0.32	\$ (0.94)	\$ 15.16
90,000 Lumen(1000 Watt)	379	\$ 16.94	\$ 15.61	\$ 0.77	\$ (2.28)	\$ 31.04
<b>Incandescent</b>						
Customer Owned Pole:						
1,000 Lumen(100 Watt)	37	\$ 4.68	\$ 1.52	\$ 0.08	\$ (0.22)	\$ 6.06
2,500 Lumen(200 Watt)	71	\$ 5.71	\$ 2.93	\$ 0.14	\$ (0.43)	\$ 8.35
4,000 Lumen(325 Watt)	115	\$ 7.14	\$ 4.74	\$ 0.23	\$ (0.69)	\$ 11.42
6,000 Lumen(450 Watt)	158	\$ 8.52	\$ 6.51	\$ 0.32	\$ (0.95)	\$ 14.40
Company Distr. System:						
1,000 Lumen(100 Watt)	37	\$ 5.78	\$ 1.52	\$ 0.08	\$ (0.22)	\$ 7.16
2,500 Lumen(200 Watt)	71	\$ 6.82	\$ 2.93	\$ 0.14	\$ (0.43)	\$ 9.46
4,000 Lumen(325 Watt)	115	\$ 8.25	\$ 4.74	\$ 0.23	\$ (0.69)	\$ 12.53
6,000 Lumen(450 Watt)	158	\$ 9.62	\$ 6.51	\$ 0.32	\$ (0.95)	\$ 15.50
<b>Rate Schedule LIT</b>						
<b>Mercury Vapor</b>						
3,300	40	\$ 9.95	\$ 1.65	\$ 0.08	\$ (0.24)	\$ 11.44
7,000	70	\$ 10.11	\$ 2.88	\$ 0.14	\$ (0.42)	\$ 12.71
11,000	100	\$ 10.69	\$ 4.12	\$ 0.20	\$ (0.60)	\$ 14.41
20,000	150	\$ 13.61	\$ 6.18	\$ 0.30	\$ (0.90)	\$ 19.19
53,000	360	\$ 23.33	\$ 14.83	\$ 0.73	\$ (2.16)	\$ 36.73
<b>Sodium Vapor</b>						
5,000	30	\$ 13.18	\$ 1.24	\$ 0.06	\$ (0.18)	\$ 14.30
8,000	40	\$ 13.31	\$ 1.65	\$ 0.08	\$ (0.24)	\$ 14.80
14,000	70	\$ 14.39	\$ 2.88	\$ 0.14	\$ (0.42)	\$ 16.99
23,000	105	\$ 18.41	\$ 4.33	\$ 0.21	\$ (0.63)	\$ 22.32
42,000	160	\$ 22.08	\$ 6.59	\$ 0.32	\$ (0.96)	\$ 28.03
127,000	360	\$ 31.36	\$ 14.83	\$ 0.73	\$ (2.16)	\$ 44.76
<b>Ultra Style-Rect. Shaped luminaries</b>						
<b>Sodium Vapor-1st Unit p/pole</b>						
5,000	30	\$ 29.59	\$ 1.24	\$ 0.06	\$ (0.18)	\$ 30.71
8,000	40	\$ 29.69	\$ 1.65	\$ 0.08	\$ (0.24)	\$ 31.18
14,000	70	\$ 29.09	\$ 2.88	\$ 0.14	\$ (0.42)	\$ 31.69

**MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY**  
**Calculation of Rate Schedule Tariff Rates**  
**Streetlighting Rate Schedules**

Rate per kWh = \$ 0.04120    \$ 0.00203    \$ (0.00601)

	kWh	Existing		Proposed		TOTAL
		Base	ENEC	Temporary Surcharge	ENEC Decrease	
		(1)	(2)	(3)	(4)	(5)=(1)+(2)+ (3)+(4)
23,000	105	\$ 30.54	\$ 4.33	\$ 0.21	\$ (0.63)	\$ 34.45
42,000	160	\$ 30.85	\$ 6.59	\$ 0.32	\$ (0.96)	\$ 36.80
Sodium Vapor-Each Additional Unit Same Pole						
5,000	30	\$ 11.49	\$ 1.24	\$ 0.06	\$ (0.18)	\$ 12.61
8,000	40	\$ 11.42	\$ 1.65	\$ 0.08	\$ (0.24)	\$ 12.91
14,000	70	\$ 11.43	\$ 2.88	\$ 0.14	\$ (0.42)	\$ 14.03
23,000	105	\$ 15.06	\$ 4.33	\$ 0.21	\$ (0.63)	\$ 18.97
42,000	160	\$ 15.51	\$ 6.59	\$ 0.32	\$ (0.96)	\$ 21.46
Urbanlites - Rect. Shaped luminaries						
Mercury Vapor						
20,000	150	\$ 27.52	\$ 6.18	\$ 0.30	\$ (0.90)	\$ 33.10
Sodium Vapor						
14,000	70	\$ 28.51	\$ 2.88	\$ 0.14	\$ (0.42)	\$ 31.11
23,000	105	\$ 29.48	\$ 4.33	\$ 0.21	\$ (0.63)	\$ 33.39
42,000	160	\$ 30.54	\$ 6.59	\$ 0.32	\$ (0.96)	\$ 36.49
Directional Lighting Service						
Mercury Vapor						
20,000	150	\$ 17.67	\$ 6.18	\$ 0.30	\$ (0.90)	\$ 23.25
53,000	360	\$ 26.20	\$ 14.83	\$ 0.73	\$ (2.16)	\$ 39.60
Each Additional Same Pole						
20,000	150	\$ 12.10	\$ 6.18	\$ 0.30	\$ (0.90)	\$ 17.68
53,000	360	\$ 15.55	\$ 14.83	\$ 0.73	\$ (2.16)	\$ 28.95
Sodium Vapor						
42,000	160	\$ 26.85	\$ 6.59	\$ 0.32	\$ (0.96)	\$ 32.80
127,000	380	\$ 30.92	\$ 15.66	\$ 0.77	\$ (2.28)	\$ 45.07
Each Additional Same Pole						
42,000	160	\$ 16.24	\$ 6.59	\$ 0.32	\$ (0.96)	\$ 22.19
127,000	380	\$ 19.25	\$ 15.66	\$ 0.77	\$ (2.28)	\$ 33.40
<u>Rate Schedule OL</u>						
High Pressure Sodium						
9,500 Lumen	51	\$ 6.29	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.18
22,000 Lumen	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
Mercury Vapor						
8,150 Lumen	74	\$ 7.61	\$ 3.05	\$ 0.15	\$ (0.44)	\$ 10.37
21,500 Lumen	162	\$ 10.99	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 17.02
<u>Rate Schedule AL</u>						
Floodlighting						
Mercury Vapor						
21,500 L (400 w)	162	\$ 10.99	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 17.02
60,000 L (1000 w)	386	\$ 16.80	\$ 15.90	\$ 0.78	\$ (2.32)	\$ 31.16
High Pressure Sodium						
50,000 L (400 w)	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
Quartz Iodine	176	\$ 11.77	\$ 7.25	\$ 0.36	\$ (1.06)	\$ 18.32
Customer Owned Equipment						
Mercury Vapor						
400 W	162	\$ 6.02	\$ 6.67	\$ 0.33	\$ (0.97)	\$ 12.05
1,000 W	386	\$ 11.47	\$ 15.90	\$ 0.78	\$ (2.32)	\$ 25.83
<u>Rate Schedule MSI</u>						
High Pressure Sodium						
Overhead Supply - Wood Pole						
5,800 Lumen	37	\$ 6.64	\$ 1.52	\$ 0.08	\$ (0.22)	\$ 8.02
9,500 Lumen	51	\$ 6.97	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 8.86
22,000 Lumen	86	\$ 9.49	\$ 3.54	\$ 0.17	\$ (0.52)	\$ 12.68
50,000 Lumen	167	\$ 13.33	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 19.55
Overhead Supply - Metal Pole						
50,000 Lumen	167	\$ 29.06	\$ 6.88	\$ 0.34	\$ (1.00)	\$ 35.28
Underground Supply - Standard Pole						
Low mount						
5,800 Lumen	37	\$ 13.30	\$ 1.52	\$ 0.08	\$ (0.22)	\$ 14.68
9,500 Lumen	51	\$ 13.64	\$ 2.10	\$ 0.10	\$ (0.31)	\$ 15.53

MONONGAHELA POWER COMPANY AND THE POTOMAC EDISON COMPANY  
Calculation of Rate Schedule Tariff Rates  
Streetlighting Rate Schedules

Rate per kWh = \$ 0.04120 \$ 0.00203 \$ (0.00601)							
	kWh	Existing		Proposed		TOTAL	
		Base	ENEC	Temporary Surcharge	ENEC Decrease	Tariff Rate	(5)=(1)+(2)+ (3)+(4)
		(1)	(2)	(3)	(4)		
High mount							
5,800 Lumen	37	\$ 22.13	\$ 1.52	\$ 0.08	\$ (0.22)	\$	23.51
9,500 Lumen	51	\$ 22.69	\$ 2.10	\$ 0.10	\$ (0.31)	\$	24.58
22,000 Lumen	86	\$ 25.22	\$ 3.54	\$ 0.17	\$ (0.52)	\$	28.41
50,000 Lumen	167	\$ 29.06	\$ 6.88	\$ 0.34	\$ (1.00)	\$	35.28
Customer Owned Equipment							
5,800 Lumen	37	\$ 3.36	\$ 1.52	\$ 0.08	\$ (0.22)	\$	4.74
9,500 Lumen	51	\$ 3.76	\$ 2.10	\$ 0.10	\$ (0.31)	\$	5.65
22,000 Lumen	86	\$ 4.80	\$ 3.54	\$ 0.17	\$ (0.52)	\$	7.99
50,000 Lumen	167	\$ 7.19	\$ 6.88	\$ 0.34	\$ (1.00)	\$	13.41
Rectangular Enclosed Underground							
High Mount							
9,500 Lumen	51	\$ 32.74	\$ 2.10	\$ 0.10	\$ (0.31)	\$	34.63
22,000 Lumen	86	\$ 33.92	\$ 3.54	\$ 0.17	\$ (0.52)	\$	37.11
50,000 Lumen	167	\$ 36.09	\$ 6.88	\$ 0.34	\$ (1.00)	\$	42.31
Multiple Units							
9,500 Lumen	51	\$ 14.01	\$ 2.10	\$ 0.10	\$ (0.31)	\$	15.90
22,000 Lumen	86	\$ 15.19	\$ 3.54	\$ 0.17	\$ (0.52)	\$	18.38
50,000 Lumen	167	\$ 17.35	\$ 6.88	\$ 0.34	\$ (1.00)	\$	23.57
Mercury Vapor							
Overhead Supply - Wood Pole							
8,150 Lumen	74	\$ 7.61	\$ 3.05	\$ 0.15	\$ (0.44)	\$	10.37
11,500 Lumen	103	\$ 8.83	\$ 4.24	\$ 0.21	\$ (0.62)	\$	12.66
21,500 Lumen	162	\$ 10.99	\$ 6.67	\$ 0.33	\$ (0.97)	\$	17.02
Overhead Supply - Metal Pole							
21,500 Lumen	162	\$ 17.54	\$ 6.67	\$ 0.33	\$ (0.97)	\$	23.57
Underground Supply							
Low Mount							
8,150 Lumen	74	\$ 10.61	\$ 3.05	\$ 0.15	\$ (0.44)	\$	13.37
High Mount							
11,500 Lumen	103	\$ 12.03	\$ 4.24	\$ 0.21	\$ (0.62)	\$	15.86
21,500 Lumen	162	\$ 17.54	\$ 6.67	\$ 0.33	\$ (0.97)	\$	23.57
Continuous Burn							
Overhead Supply - Wood Pole							
11,500 Lumen	215	\$ 8.83	\$ 12.08	\$ 0.34	\$ (0.99)	\$	20.26
<b>Rate Schedule SL</b>							
Mast Arm, Bkt, or CS							
1,000 Lumen	37	\$ 2.26	\$ 1.52	\$ 0.08	\$ (0.22)	\$	3.64
2,500 Lumen	71	\$ 2.93	\$ 2.93	\$ 0.14	\$ (0.43)	\$	5.57
4,000 Lumen	115	\$ 3.24	\$ 4.74	\$ 0.23	\$ (0.69)	\$	7.52
Om. or White Way Overhead							
4,000 Lumen	115	\$ 3.76	\$ 4.74	\$ 0.23	\$ (0.69)	\$	8.04
6,000 Lumen	158	\$ 4.14	\$ 6.51	\$ 0.32	\$ (0.95)	\$	10.02
10,000 Lumen	242	\$ 5.52	\$ 9.97	\$ 0.49	\$ (1.45)	\$	14.53
White Way Underground							
6,000 Lumen	158	\$ 5.41	\$ 6.51	\$ 0.32	\$ (0.95)	\$	11.29
<b>Rate Schedule Y-6</b>							
High Pressure Sodium							
1-3 Lights 7,000 Lumens 100W	47	\$ 11.65	\$ 1.94	\$ 0.10	\$ (0.28)	\$	13.41
4-10 Lights 7,000 Lumens 100W	47	\$ 11.08	\$ 1.94	\$ 0.10	\$ (0.28)	\$	12.84
11 or More 7,000 Lumens 100W	47	\$ 10.66	\$ 1.94	\$ 0.10	\$ (0.28)	\$	12.42
High Pressure Sodium							
20,000 Lumens 250 Watt	100	\$ 16.70	\$ 4.12	\$ 0.20	\$ (0.60)	\$	20.42
50,000 Lumens 400 Watt	150	\$ 15.18	\$ 6.18	\$ 0.30	\$ (0.90)	\$	20.76
Mercury Vapor							
8,150 Lumen 175 Watt	70	\$ 10.95	\$ 2.88	\$ 0.14	\$ (0.42)	\$	13.55

MONONGAHELA POWER COMPANY  
Fairmont, West Virginia

Twentieth Revision of  
Original Sheet No. 2-1  
P.S.C. W. Va. No. 22  
Canceling  
Nineteenth Revision of  
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### RESIDENTIAL SERVICE RATE SCHEDULE "A"

AVAILABLE for single phase residential use through one meter.

MONTHLY RATE (For a single residence)

Customer Charge - \$ 5.00 per month

(D) Energy Charge  
All kilowatt-hours.....\$ 0.09352 per kilowatt-hour

#### MINIMUM BILL

The Customer Charge shall be the minimum bill.

#### LOCAL TAX ADJUSTMENT

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 18 of "Rules and Regulations for Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

#### ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

#### ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

#### EEC PROGRAM COST RECOVERY RATE

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

#### VEGETATION MANAGEMENT SURCHARGE

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 6-F-1 of this tariff.

#### TERMS OF PAYMENT

Bills are due and payable on presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within twenty (20) days from the date mailed.

#### TERM

A contract may be required for new Customers which require an extension of Company facilities under Company Rule 15, otherwise, no term.

#### GENERAL

Rates and provisions are subject to "Rules and Regulations for Electric Service."

Where two or more residences located on one premises are supplied through a single meter, each shall be classed as a single residence, and the contracting party will be billed under this schedule, with Customer Charge increased in proportion to the number of residences served. Apartments and trailer courts supplied through one meter shall be billed on an appropriate General Service Rate. (Reference: "Rules and Regulations for the Government of Electric Utilities," issued by the Public Service Commission of West Virginia.)

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### GENERAL SERVICE RATE SCHEDULE "B"

AVAILABLE through a single meter point for service to general service Customers with normal maximum electrical requirements of 10 kW or less per month. When a Customer being served under this Schedule establishes or exceeds a normal maximum electrical requirement of 10 kW per month, the Customer will be placed on the appropriate general service Schedule. Service shall not be available for standby or maintenance service such as that required for Alternative Generation Facilities.

#### MONTHLY RATE

Customer Charge - \$ 5.00 per month

#### Energy Charge

(D) First 400 kilowatt-hours.....\$ 0.10968 per kilowatt-hour  
(D) All additional kilowatt-hours ..... 0.09659 per kilowatt-hour

#### MINIMUM BILL

The minimum bill per month shall not be less than the Customer Charge nor less than \$ 2.41 per kilowatt of capacity necessary to serve the Customer. The Company may install a demand meter for connections which, in any month, are expected to exceed 25 KW demand. Also, the Company may install a demand meter on connections whose usage exceeds 5,000 kWh in any month. If a demand meter has been installed, the maximum reading of the demand meter in the previous 12 months will determine the kilowatt capacity necessary to serve. For connections without a demand meter, a kilowatt of capacity necessary to serve under this schedule shall be defined as the maximum number of kilowatt-hours used in the current month, or in any of the previous 12 months, divided by 120. If a Customer can demonstrate to the Company that his calculated demand is unreasonable, then the Company may change such demand or demands, and may elect to install a demand meter.

#### LOCAL TAX ADJUSTMENT

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 18 of "Rules and Regulations for Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

#### ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

#### ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

#### EEC PROGRAM COST RECOVERY RATE

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

#### VEGETATION MANAGEMENT SURCHARGE

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 6-F-1 of this tariff.

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### GENERAL SERVICE RATE SCHEDULE "C"

AVAILABLE at a single place of use for any purpose when all service is combined for billing under this schedule, except that (1) service for heating may be billed separately under a special schedule previously available for such heating service; and (2) service shall not be available for standby or maintenance service such as that required for Alternative Generation Facilities.

#### MONTHLY RATE

Customer Charge - \$ 40.00 per month

(I)	Demand Charge	
	All kilowatts.....	\$ 13.63 per kilowatt
(D)	Energy Charge	
	All kilowatt-hours.....	\$ 0.04573 per kilowatt-hour

#### MINIMUM BILL

\$ 4.00 per kilowatt of maximum billing demand established during the preceding 12 months. Such demand shall not be less than 50% of the kilowatt capacity set forth in the Electric Service Agreement, nor less than 10 kilowatts.

#### VOLTAGE DISCOUNT

When service is furnished at a voltage greater than 2,000 volts, a voltage discount of \$0.25 per kilowatt of demand will be applied to all kilowatts of demand, but in no case will the amount of the minimum bill be hereby reduced.

#### LOCAL TAX ADJUSTMENT

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 18 of "Rules and Regulations for Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

#### ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

#### ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

#### EEC PROGRAM COST RECOVERY RATE

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

#### VEGETATION MANAGEMENT SURCHARGE

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 6-F-1 of this tariff.

#### TERMS OF PAYMENT

Bills are due and payable on presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within twenty (20) days from the date mailed.

#### DETERMINATION OF BILLING DEMAND

The monthly billing demand will be the maximum number of kilowatts measured over any fifteen-minute interval, except as modified by the provisions for off-peak service.

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**CHURCH AND SCHOOL HEATING RATE  
SCHEDULE "CSH"**

AVAILABLE for electric heating service in a public or parochial school, or in a nonprofit college or university, or in a church, where electricity is used as the sole means of such heating, subject to the definition and conditions stated herein. This schedule is closed except to Customers being served under it and at their current service locations, or having contracted for service under it, on April 25, 1974.

**MONTHLY RATE**

(D) All kilowatt-hours.....\$ 0.08633 per kilowatt-hour

**MINIMUM BILL**

None.

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company as specified in Rule No. 18 of "Rules and Regulations for Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

**VEGETATION MANAGEMENT SURCHARGE**

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 6-F-1 of this tariff.

**TERMS OF PAYMENT**

Bills are due and payable on presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within twenty (20) days from the date mailed.

**GENERAL**

Rates and provisions are subject to "Rules and Regulations for Electric Service."

The word "school" is used in this rate schedule in its customary sense to refer to a grade school, high school (through the twelfth grade), college, or college-related technical schools, consisting of but not limited to classrooms, laboratories, manual arts shops, domestic science kitchens, dormitories, and other facilities customarily associated with such schools. However, service for athletic field flood lighting, heavy duty shop motors, welding equipment, and for other special purposes will be excluded from the total service in the determination of quantities used for heating by the optional percentage method.

The word "church" is used in this rate schedule in its customary sense to refer to a building used principally for weekly services of religious worship and only incidentally at other times for activities related to religious objectives. (C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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### GENERAL SERVICE RATE SCHEDULE "D"

AVAILABLE at a single place of use for any purpose when all deliveries are at the standard distribution voltage of the immediate area as designated by Company but not less than 1,000 volts, and through one metering point, except that service shall not be available for standby or maintenance service such as that required for Alternative Generation Facilities. An Electric Service Agreement shall be executed.

#### MONTHLY RATE

	Demand Charge	
(I)	First 500 kilowatts .....	\$ 16.49 per kilowatt
(I)	All additional kilowatts.....	15.03 per kilowatt
	All kilovars in excess of 35% of the current kilowatt billing demand.....	0.40 per kilovar
(D)	Energy Charge	
	All kilowatt-hours.....	\$ 0.04057 per kilowatt-hour

#### MINIMUM BILL

The minimum monthly bill shall not be less than the highest of the following:

1. The demand charge, or
2. \$ 2.70 per KW of the highest billing demand established during the preceding 12 months, or
3. \$ 2.70 times 50% of the kilowatt capacity set forth in the Agreement.

#### VOLTAGE DISCOUNT

When service is furnished at a voltage greater than 15,000 volts, a voltage discount of \$0.25 per kilowatt of demand will be applied to all kilowatts of demand, but in no case will the amount of the minimum bill be hereby reduced.

#### LOCAL TAX ADJUSTMENT

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 18 of "Rules and Regulations for Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

#### ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

#### ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

#### EEC PROGRAM COST RECOVERY RATE

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

#### VEGETATION MANAGEMENT SURCHARGE

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 6-F-1 of this tariff.

#### TERMS OF PAYMENT

Bills are due and payable on presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within twenty (20) days from the date mailed.

#### DETERMINATION OF BILLING DEMAND

The monthly billing demand will be the maximum kilowatts and kilovars each integrated over any fifteen-minute interval, except as modified under the provisions for off-peak service, but in no case shall the monthly billing demand be less than 200 kilowatts.

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### GENERAL POWER SERVICE RATE SCHEDULE "K"

AVAILABLE to single point of delivery for balanced three-phase power loads of not less than 3,000 kilovolt-amperes (1,000 kilovolt-amperes for customers served hereunder prior to July 22, 1980) at prevailing voltages as designated by Company but not less than 15,000 volts. Also available at Company standard voltages between 10,000 and 15,000 volts where Company elects to supply service by one transformation from an adjacent transmission line operated at a voltage in excess of 100,000 volts. An Electric Service Agreement shall be executed.

#### MONTHLY RATE

Customer Charge - \$500.00 per month

#### Demand Charge

- (I) First 1,000 kilovolt-amperes.....\$ 14.383 per kilovolt-ampere  
(I) All additional kilovolt-amperes ..... 12.229 per kilovolt-ampere

#### Energy Charge

- (D) All kilowatt-hours.....\$ 0.03518 per kilowatt-hour

#### Economic Stability Credit

All kilowatt-hours (Effective for service rendered 1-1-14 through 12-31-15) .. (\$0.00025) per kilowatt-hour

#### VOLTAGE DISCOUNT

When service is furnished at a voltage greater than 100,000 volts, a voltage discount of \$0.50 per kilovolt-ampere will be applied to all kilovolt-amperes of billing demand.

#### LINE VOLTAGE CHARGE

When customer desires to take service under this schedule at a voltage between 10,000 and 15,000 volts at a service point located more than 700 feet from Company's substation serving customer, an additional line voltage charge shall apply. Such charge shall be \$ 0.40 per kilovolt-ampere of billing demand. This additional line voltage charge shall not apply to customers served on this schedule prior to June 12, 1991.

#### DETERMINATION OF DEMAND AND BILLING DEMAND

##### Demand

The maximum kilovolt-amperes integrated over any 15-minute interval shall constitute the demand.

##### Billing Demand

The billing demand for any month shall be the maximum demand measured during on-peak hours as hereinafter defined plus 25% of the excess of the maximum off-peak demand over such on-peak demand but in no case shall be less than the highest of the following:

- (a) 1,000 kilovolt-amperes for customers served hereunder before July 22, 1980.
- (b) 3,000 kilovolt-amperes for customers served hereunder on or after July 22, 1980.
- (c) 50% of the kilovolt-ampere capacity specified in the Electric Service Agreement.
- (d) 70% of the maximum billing demand for the 12 months prior to the billing month.

On-peak hours shall be from 7:00 A.M. to 10:00 P.M. Monday through Saturday. All other hours are off-peak.

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**PRIVATE OUTDOOR LIGHTING SERVICE RATE  
SCHEDULE "SL-P"**

AVAILABLE for outdoor, mercury vapor or high pressure sodium vapor (HPS) lighting service contracted for prior to November 26, 1997 to individuals or groups of individuals, (other than municipalities or other governmental bodies) for lighting outdoor areas, where such service can be supplied by the installation of a luminaire on an existing Company pole and supplied directly from the existing overhead distribution system except as provided below. The rating of lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

**MONTHLY RATE**

- |     |  |                   |
|-----|--|-------------------|
| (D) | 1. Standard Semi-Enclosed Type HPS Unit on 4-Foot Bracket or less:<br>9,500 Lumen (100 watt) Lamp (51 KWH) .....       | \$ 8.18 per lamp  |
| (D) | 2. Standard Enclosed Type HPS Cobra Luminaire on 8-Foot Bracket or less:<br>9,500 Lumen (100 watt) Lamp (51 KWH) ..... | \$ 8.86 per lamp  |
| (D) | 22,000 Lumen (200 watt) Lamp (86 KWH) .....  | 12.68 per lamp    |
| (D) | 50,000 Lumen (400 watt) Lamp (167 KWH) .....   | 19.55 per lamp    |
| (D) | 3. Standard HPS Floodlight on Bracket:<br>22,000 Lumen (200 watt) Lamp (86 KWH) .....                                  | \$ 12.68 per lamp |
| (D) | 50,000 Lumen (400 watt) Lamp (167 KWH) .....   | 19.55 per lamp    |
| (D) | 4. Pole Top Mounted 9,500 Lumen HPS Unit:<br>On Standard Pole (51 KWH) .....   | \$ 15.53 per lamp |

Installations under Item 4. include Company standard pole with mounting height approximately 14 feet, a concrete base if required, installed where service is supplied from an existing underground distribution system and the point of connection for secondary service is located within three feet of the base of the light pole. For installations requiring additional facilities, customer shall pay installed costs of the additional facilities and actual costs for any maintenance performed on the additional facilities.

- |     |   |                   |
|-----|---|-------------------|
| (D) | 5. Standard Semi-Enclosed Type Mercury Vapor Unit on 4-Foot Bracket:<br>8,150 Lumen (175 watt) Lamp (74 KWH) .....      | \$ 10.37 per lamp |
| (D) | 6. Standard Enclosed Type Mercury Vapor Unit on 8-Foot Bracket or less:<br>11,500 Lumen (250 watt) Lamp (103 KWH) ..... | \$ 12.66 per lamp |
| (D) | 21,500 Lumen (400 watt) Lamp (162 KWH) .....  | 17.02 per lamp    |
| (D) | 60,000 Lumen (1000 watt) Lamp (386 KWH) .....   | 31.16 per lamp    |
| (D) | 7. Standard Mercury Vapor Floodlight on Bracket:<br>11,500 Lumen (250 watt) Lamp (103 KWH) .....                        | \$ 12.66 per lamp |
| (D) | 21,500 Lumen (400 watt) Lamp (162 KWH) .....  | 17.02 per lamp    |
| (D) | 60,000 Lumen (1000 watt) Lamp (386 KWH) .....   | 31.16 per lamp    |
| (D) | 8. Pole Top Mounted 8,150 Lumen Mercury Vapor Unit (Restricted-See**):<br>On 15' Steel Pole (175 watt) (74 KWH) .....   | \$ 17.72 per lamp |
| (D) | On 20' Steel Pole (175 watt) (74 KWH) .....   | 19.08 per lamp    |
| (D) | On 14' Aluminum Pole (175 watt) (74 KWH) .....  | 17.78 per lamp    |

\*\* Restricted to locations in service on June 12, 1991. This unit is not available for new or additional installations.

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**STREET AND HIGHWAY LIGHTING SERVICE RATE  
SCHEDULE "MV"**

AVAILABLE for outdoor Mercury Vapor Lighting service for streets, highways, and other public places of incorporated communities or other governmental units contracted for prior to November 26, 1997. Standard service (Items 1, 2, and 3 below) under this schedule shall be supplied from overhead lines and from Company's standard type lamps, fixtures, supporting arms, ballasts, conductors, and other appurtenances, using wood distribution poles unrestricted as to their use by Company for purposes other than street lighting. The rating of lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

**MONTHLY RATE**

(D)	1. Standard Semi-Enclosed Type Luminaire on 6-Foot Bracket or Less: 8,150 Lumen (175 watt) Lamp (74 kWh).....	\$ 10.37 per lamp
(D)	2. Standard Enclosed Type Luminaire on 8-Foot Bracket or Less: 11,500 Lumen (250 watt) Lamp (103 kWh).....	\$ 12.66 per lamp
(D)	21,500 Lumen (400 watt) Lamp (162 kWh).....	17.02 per lamp
(D)	60,000 Lumen (1000 watt) Lamp (386 kWh).....	31.16 per lamp
(D)	3. Standard Floodlight on Bracket: 11,500 Lumen (250 watt) Lamp (103 kWh) (Restricted-See*) .....	\$ 12.66 per lamp
(D)	21,500 Lumen (400 watt) Lamp (162 kWh).....	17.02 per lamp
(D)	60,000 Lumen (1000 watt) Lamp (386 kWh).....	31.16 per lamp
	* Restricted to locations in service on November 25, 1981. They are not available for new or additional installations.	
(D)	4. Pole Top Mounted 8,150 Lumen (175 watt) Lamp (74 kWh) (Restricted-See**)	\$ 17.78 per lamp
	** Restricted to locations in service on June 12, 1991. This unit is not available for new or additional installations.	

**ADDITIONAL CHARGES FOR OPTIONAL INSTALLATION (Restricted-See\*\*\*)**

8,150 Lumen Unit with 8' Arm .....	\$ 0.26 per unit
8,150, 11,500, 21,500, or 60,000 Lumen Units with 10' Arm .....	0.65 per unit
with 12' Arm .....	0.85 per unit
with 15' Arm .....	1.02 per unit
*** Restricted to equipment in service on December 2, 1985. They are not available for new or additional installations.	

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 18 "Rules and Regulations for Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

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**STREET AND HIGHWAY LIGHTING SERVICE RATE  
SCHEDULE "SV"**

AVAILABLE for outdoor high pressure sodium vapor (HPS) lighting service contracted for prior to November 26, 1997 for streets, highways, and other public places of incorporated communities or other governmental units. Standard service shall be supplied from overhead lines and from Company's standard type lamps, fixtures, supporting arms, ballasts, conductors, and other appurtenances, using wood distribution poles unrestricted as to their use by Company for purposes other than street lighting. The rating of lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

**MONTHLY RATE**

(D)	1. Standard Semi-Enclosed Type HPS Unit on 6-Foot Bracket or less: 9,500 Lumen (100 watt) Lamp (51 KWH).....	\$ 8.18 per lamp
(D)	2. Standard Enclosed Type HPS Cobra Luminaire on 8-Foot Bracket or less: 9,500 Lumen (100 watt) Lamp (51 KWH).....	\$ 8.86 per lamp
(D)	22,000 Lumen (200 watt) Lamp (86 KWH).....	12.68 per lamp
(D)	50,000 Lumen (400 watt) Lamp (167 KWH).....	19.55 per lamp
(D)	3. Standard HPS Floodlight on Bracket: 22,000 Lumen (200 watt) Lamp (86 KWH).....	\$ 12.68 per lamp
(D)	50,000 Lumen (400 watt) Lamp (167 KWH).....	19.55 per lamp
(D)	4. Pole Top Mounted 9,500 Lumen HPS Unit: On Standard Pole (51 KWH).....	\$ 15.53 per lamp

Installations under Item 4. include Company standard pole with mounting height approximately 14 feet, a concrete base if required, installed where service is supplied from an existing underground distribution system and the point of connection for secondary service is located within three feet of the base of the light pole. For installations requiring additional facilities, customer shall pay installed costs of the additional facilities and actual costs for any maintenance performed on the additional facilities.

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 18 of "Rules and Regulations for Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

**VEGETATION MANAGEMENT SURCHARGE**

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 6-F-1 of this tariff.

(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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Canceling  
Fifth Revision of  
Original Sheet No. 18-4

**ALTERNATIVE GENERATION SCHEDULE  
SCHEDULE "AGS"**

**Penalty**

The maximum by which the customer's kilowatt demands exceed the sum of the customer's firm capacities (i.e., the sum of the customer's Supplementary, Maintenance, and Standby Firm capacities as applicable) during each interruption period shall be subject to a penalty charge. Only one such penalty shall be assessed per interruption period. The first time that the customer is notified by the Company to interrupt service and the customer fails to reduce load to not more than the sum of its firm capacities, a penalty of \$10 per kilowatt shall be applied to those kilowatts in excess of firm capacities. Upon the second occurrence of such a failure to interrupt, a penalty of \$10 per kilowatt calculated as set forth above shall be applied and interruptible service shall not be available to the customer for the next two years. Upon the third occurrence of such a failure to interrupt, a \$10 per kilowatt penalty shall be applied and interruptible service shall no longer be available to the customer.

**MONTHLY RATE**

**Demand Charge**

		<u>Service Voltage</u>		
		<u>0-15,000</u>	<u>15,000-100,000</u>	<u>Over 100,000</u>
<b>Firm Standby Power</b>				
(I)	First 100 Kilowatts of Standby Power			
	Billing Demand or Less Net per KW .....	\$ 6.400	\$ 4.574	\$ 3.672
(I)	Additional Kilowatts of Standby Power			
	Billing Demand Net per KW .....	5.370	3.540	2.635
<b>All Kilovars of Standby Reactive</b>				
<b>Kilovolt-Ampere Demand in Excess of</b>				
<b>35% of the Current Kilowatt Standby</b>				
	Power Billing Demand Net per Kilovar .....	0.40	0.40	0.40
<b>Interruptible Standby Power</b>				
(I)	First 100 Kilowatts of Interruptible			
	Standby Power Billing Demand Net per KW .....	\$ 6.125	\$ 4.300	\$ 3.398
(I)	Additional Kilowatts of Interruptible			
	Standby Power Billing Demand Net per KW .....	5.096	3.265	2.361
<b>All Kilovars of Standby Reactive</b>				
<b>Kilovolt-Ampere Demand in Excess of</b>				
<b>35% of the Current Kilowatt Interruptible</b>				
	Standby Power Billing Demand Net per Kilovar .....	0.40	0.40	0.40
<b>Firm or Interruptible Maintenance Power</b>				
(I)	All Kilowatts of Maintenance Power			
	Billing Demand Net per KW .....	\$ 5.096	\$ 3.265	\$ 2.361
(I)	All Kilovars of Maintenance Reactive			
	Kilovolt-Ampere Demand in Excess of			
<b>35% of the Current Kilowatt Maintenance</b>				
	Power Billing Demand Net per Kilovar .....	0.40	0.40	0.40

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### ALTERNATIVE GENERATION SCHEDULE SCHEDULE "AGS"

#### Energy Charge

- (I) All Standby and Maintenance Kilowatt-hours.....\$ 0.03206 net per kilowatt-hour

#### TERMS OF PAYMENT

Bills are due and payable upon presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within 20 days from the date mailed.

#### DETERMINATION OF DEMANDS

("Normal alternative generation" as used below is defined above in Types of Supply.)

#### Power Demands

As a preliminary step to the determination of Billing Demands, the customer's Power Demands shall be determined as specified below:

- (1) Supplementary Power Demand shall be determined as specified below for the billing period unless the applicable standard rate schedule requires that the determinations specified below be made using other periods. Any instantaneous operating peak provision of the applicable standard rate schedule shall be included. If the applicable standard rate schedule has a demand charge based on kilovolt-amperes, the determinations specified below shall be performed based on kilovolt-ampere demands instead of kilowatt demands.

The demand for each period shall be the highest of:

- (a) The maximum kilowatt demand created during the intervals in the period when no Maintenance Power or Standby Power is used, or if no such intervals exist in the period, the lesser of:
    - (i) the Supplementary Power Demand of the previous period; or
    - (ii) the maximum kilowatt demand created during the period; or
  - (b) The maximum kilowatt demand created during the period less the normal alternative generation for the billing period; or
  - (c) The maximum by which a kilowatt demand created during the period exceeds the sum of the then effective Maintenance Power Agreement Capacity and the Standby Power Agreement Capacity being utilized.
- (2) Maintenance Power Demand shall be the maximum Maintenance Power Agreement Capacity for the billing period, regardless of whether it is for Firm or Interruptible Maintenance Power.

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**OUTDOOR LIGHTING  
EQUIPMENT, MAINTENANCE, AND UNMETERED SERVICE  
SCHEDULE EMU**

**AVAILABILITY**

Available for roadway and other outdoor lighting supplied from overhead or underground secondary distribution system of the Company and contracted for by a Customer for lighting accessible areas.

**MONTHLY RATE**

**OVERHEAD SERVICE**

High Pressure Sodium - Vertical Open Lens Luminaire ("OL")

		Installation <u>Requires a Pole<sup>1</sup></u>	Installation <u>on Existing Pole</u>
(D)	9,500 Lumen - 100 watt..... 51 kWh.....	\$ 17.87 net each .....	\$ 8.18 net each

Mercury Vapor - Horizontal Luminaire (Cobra Head)

(D)	8,150 Lumen - 175 watt..... 74 kWh.....	\$ 10.37 net each
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High Pressure Sodium - Horizontal Luminaire (Cobra Head)

(D)	9,500 Lumen - 100 watt..... 51 kWh.....	\$ 8.86 net each
(D)	22,000 Lumen - 200 watt..... 86 kWh.....	\$ 12.68 net each
(D)	50,000 Lumen - 400 watt..... 167 kWh.....	\$ 19.55 net each

Metal Halide - Horizontal Luminaire (Cobra Head)

(D)	36,000 Lumen - 400 watt..... 157 kWh.....	\$ 22.23 net each
(D)	90,000 Lumen - 1000 watt..... 379 kWh.....	\$ 42.81 net each

High Pressure Sodium Floodlight

(D)	22,000 Lumen - 200 watt..... 86 kWh.....	\$ 12.68 net each
(D)	50,000 Lumen - 400 watt..... 167 kWh.....	\$ 19.55 net each

Metal Halide Floodlight

(D)	36,000 Lumen - 400 watt..... 157 kWh.....	\$ 22.23 net each
(D)	90,000 Lumen - 1000 watt..... 379 kWh.....	\$ 42.81 net each

**UNDERGROUND SERVICE**

High Pressure Sodium - Colonial Post Top Luminaire 14' Mounting Height

(D)	9,500 Lumen - 100 watt..... 51 kWh.....	\$ 15.53 net each
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<sup>1</sup> Mounted on a 30' direct burial pole

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**OUTDOOR LIGHTING  
EQUIPMENT, MAINTENANCE, AND UNMETERED SERVICE  
SCHEDULE EMU  
(Continued)**

**UNDERGROUND SERVICE (Continued)**

Metal Halide - Colonial Post Top Luminaire 14' Mounting Height

(D) 11,600 Lumen - 175 watt..... 74 kWh ..... \$ 20.62 net each

High Pressure Sodium - Horizontal Luminaire (Cobra Head) 30' Mounting Height

	Single Luminaire Per Pole	Each Additional Luminaire Per Pole
(D) 9,500 Lumen - 100 watt..... 51 kWh ..... \$ 24.58 net each .....		\$ 8.86 net each
(D) 22,000 Lumen - 200 watt..... 86 kWh ..... \$ 28.41 net each .....		\$ 12.68 net each
(D) 50,000 Lumen - 400 watt..... 167 kWh ..... \$ 35.28 net each .....		\$ 19.55 net each

Metal Halide - Horizontal Luminaire (Cobra Head) 30' Mounting Height

	Single Luminaire Per Pole	Each Additional Luminaire Per Pole
(D) 36,000 Lumen - 400 watt..... 157 kWh ..... \$ 37.96 net each .....		\$ 22.23 net each
(D) 90,000 Lumen - 1000 watt..... 379 kWh ..... \$ 58.54 net each .....		\$ 42.81 net each

High Pressure Sodium - Rectangular Luminaire (Shoe Box) 30' Mounting Height

	Single Luminaire Per Pole	Each Additional Luminaire Per Pole
	With base <sup>1</sup>	No base
(D) 9,500 Lumen - 100 watt..... 51 kWh ..... \$ 34.63 net each .....	\$ 27.60	\$ 15.90 net each
(D) 22,000 Lumen - 200 watt..... 86 kWh ..... \$ 37.11 net each .....	\$ 30.08	\$ 18.38 net each
(D) 50,000 Lumen - 400 watt..... 167 kWh ..... \$ 42.31 net each .....	\$ 35.28	\$ 23.57 net each

Metal Halide - Rectangular Luminaire (Shoe Box) 30' Mounting Height

	With base <sup>1</sup>	No base	Each Additional Luminaire Per Pole
(D) 36,000 Lumen - 400 watt..... 157 kWh ..... \$ 44.49 net each .....	\$ 37.48		\$ 25.78 net each

Metal Halide - Rectangular Area Luminaire (Shoe Box) 40' Mounting Height

(D) 90,000 Lumen - 1000 watt..... 379 kWh ..... \$ 63.57 ..... \$ 47.44 net each

Note: The rating of lamps in lumens is for identification purposes only and shall approximate the manufacturer's standard rating. All luminaires are lighted from dusk to dawn aggregating approximately 4,200 hours per year.

<sup>1</sup> With base includes the installation of a non-concrete power installed foundation where soil conditions warrant its application.

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Fifth Revision of  
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**OUTDOOR LIGHTING  
MAINTENANCE AND UNMETERED SERVICE  
SCHEDULE MU**

**AVAILABILITY**

Available for high pressure sodium, mercury vapor, metal halide and incandescent lighting.  
**MONTHLY RATE**

		Installed On Customer-Owned Pole	Installed On Company's Distribution System
	<u>High Pressure Sodium Vapor</u>		
(D)	9,500 Lumen - 100 watt ..... 51 kWh.....	\$ 5.65 net each .....	\$ 6.76 net each
(D)	22,000 Lumen - 200 watt ..... 86 kWh.....	\$ 7.99 net each .....	\$ 9.10 net each
(D)	50,000 Lumen - 400 watt ..... 167 kWh.....	\$ 13.41 net each .....	\$ 14.52 net each
	<u>Mercury Vapor</u>		
(D)	8,150 Lumen - 175 watt ..... 74 kWh.....	\$ 7.09 net each .....	\$ 8.21 net each
(D)	11,500 Lumen - 250 watt ..... 103 kWh.....	\$ 9.09 net each .....	\$ 10.18 net each
(D)	21,500 Lumen - 400 watt ..... 162 kWh.....	\$ 12.05 net each .....	\$ 13.15 net each
(D)	60,000 Lumen - 1000 watt ..... 386 kWh.....	\$ 25.83 net each .....	\$ 26.94 net each
	<u>Metal Halide</u>		
(D)	11,600 Lumen - 175 watt ..... 74 kWh.....	\$ 8.40 net each .....	\$ 9.50 net each
(D)	15,000 Lumen - 250 watt ..... 103 kWh.....	\$ 10.53 net each .....	\$ 11.63 net each
(D)	36,000 Lumen - 400 watt ..... 157 kWh.....	\$ 14.05 net each .....	\$ 15.16 net each
(D)	90,000 Lumen - 1000 watt ..... 379 kWh.....	\$ 29.93 net each .....	\$ 31.04 net each
	<u>Incandescent</u>		
(D)	1,000 Lumen - 100 watt ..... 37 kWh.....	\$ 6.06 net each .....	\$ 7.16 net each
(D)	2,500 Lumen - 200 watt ..... 71 kWh.....	\$ 8.35 net each .....	\$ 9.46 net each
(D)	4,000 Lumen - 325 watt ..... 115 kWh.....	\$ 11.42 net each .....	\$ 12.53 net each
(D)	6,000 Lumen - 450 watt ..... 158 kWh.....	\$ 14.40 net each .....	\$ 15.50 net each

Note: The rating of the lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company as specified in Rule No. 18, Rules and Regulations for Electric Service, there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

**VEGETATION MANAGEMENT SURCHARGE**

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 6-F-1 of this tariff.

**LATE PAYMENT CHARGE**

Bills are due and payable on presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within twenty (20) days from the date mailed.

(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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**Schedule LIT, OUTDOOR LIGHTING SERVICE (CIS RATE CODE 300)**  
**ELECTRIC**

1. APPLICABILITY

This schedule is applicable to any customer for outdoor lighting service except where installations are prevented by any public authority having jurisdiction or are otherwise unlawful. Available only for installations served prior to January 1, 2003.

(D) 2. MONTHLY RATE

A. Watchlight, Area, and Roadway Lighting Service

Monthly kWh	Approximate Lumens	Type	Rate per Unit Per Month
40	3,300	Mercury Vapor	\$ 11.44
70	7,000	Mercury Vapor	\$ 12.71
100	11,000 *	Mercury Vapor	\$ 14.41
150	20,000	Mercury Vapor	\$ 19.19
360	53,000 *	Mercury Vapor	\$ 36.73
30	5,000	Sodium Vapor	\$ 14.30
40	8,000	Sodium Vapor	\$ 14.80
70	14,000	Sodium Vapor	\$ 16.99
105	23,000	Sodium Vapor	\$ 22.32
160	42,000	Sodium Vapor	\$ 28.03
360	127,000	Sodium Vapor	\$ 44.76

\* These mercury vapor lamps will continue to be supplied at those locations being served as of May 29, 1981, at the rates set forth above. These mercury vapor lamps will not be supplied unless written commitments were made prior to May 29, 1981, and, if an existing mercury vapor lamp is discontinued at the customer's option, it shall not again be available. The Company will replace, at its own expense, mercury vapor lighting fixtures which fail, and which cannot be made operative, with Company standard high pressure sodium vapor fixtures of the Customer's choice. These will be billed at the appropriate rate for the fixture chosen. If the Customer prefers, the Company will remove the defective mercury vapor fixture at its own expense without replacement.

(D)

B. Ultra Style - Rectangular shaped luminaries which provide sharp cut-off light patterns along with decorative, environmental quality, applicable to Area and Roadway Lighting service.

Monthly kWh	Approximate Lumens	Type	Rate per Unit Per Month	
			1st Unit Per Pole	Each Additional Unit on Same Pole
30	5,000	Sodium Vapor	\$ 30.71	\$ 12.61
40	8,000	Sodium Vapor	\$ 31.18	\$ 12.91
70	14,000	Sodium Vapor	\$ 31.69	\$ 14.03
105	23,000	Sodium Vapor	\$ 34.45	\$ 18.97
160	42,000	Sodium Vapor	\$ 36.80	\$ 21.46

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**Schedule LIT, OUTDOOR LIGHTING SERVICE (CIS RATE CODE 300, CONTINUED)**  
**ELECTRIC**

(D) 2. MONTHLY RATE (continued)

C. Urbanlites - Rectangular shaped luminaries which provide sharp cut-off patterns along with decorative, environment qualities, applicable to Area and Roadway Lighting service. These lamps will continue to be supplied at those locations being served as of May 29, 1981, at the rates set forth below. No additional lamps will be supplied unless written commitments were made prior to May 29, 1981.

Monthly kWh	Approximate Lumens	Type	Rate per Unit Per Month
150	20,000	Mercury Vapor	\$ 33.10
70	14,000	Sodium Vapor	\$ 31.11
105	23,000	Sodium Vapor	\$ 33.39
160	42,000	Sodium Vapor	\$ 36.49

(D)

D. Directional Lighting Service

Monthly kWh	Approximate Lumens	Type	Rate per Unit Per Month	
			1st Unit Per Pole	Each Additional Unit on Same Pole
150	20,000	Mercury Vapor	\$ 23.25	\$ 17.68
360	53,000	Mercury Vapor	\$ 39.60	\$ 28.95
160	42,000	Sodium Vapor	\$ 32.80	\$ 22.19
380	127,000	Sodium Vapor	\$ 45.07	\$ 33.40

E. Minimum Charge

The monthly minimum charge shall be the rate specified in 2.A, 2.B, 2.C, or 2.D above.

LOCAL TAX ADJUSTMENT

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 18 of "Rules and Regulations for Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet Nos. 5-1 thru 5-3.

ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 6-A-1 of this tariff.

ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 6-B-1 and 6-C-1 of this tariff.

EEC PROGRAM COST RECOVERY RATE

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 6-D-1 of this tariff.

VEGETATION MANAGEMENT SURCHARGE

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 6-F-1 of this tariff.

TERMS OF PAYMENT

Bills are due and payable on presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within twenty (20) days from the date mailed.

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**RESIDENTIAL SERVICE RATE  
SCHEDULE "R"**

AVAILABLE for single phase residential use through one meter.

MONTHLY RATE (For a single residence)

Customer Charge - \$ 5.00 per month

Energy Charge

(D) All kilowatt-hours..... \$ 0.09352 per kilowatt-hour

MINIMUM BILL

The Customer charge shall be the minimum bill.

LOCAL TAX ADJUSTMENT

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 20 of "Rules and Regulations Covering the Supply of Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet No. 5-1.

ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 7-C-1 of this tariff.

ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 7-D-1 and 7-E-1 of this tariff.

EEC PROGRAM COST RECOVERY RATE

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 7-F-1 of this tariff.

VEGETATION MANAGEMENT SURCHARGE

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 7-G-1 of this tariff.

TERMS OF PAYMENT

Bills are due and payable on presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within twenty (20) days from the date mailed.

TERM

A contract may be required for new Customers which require an extension of Company facilities under Company Rule 18, otherwise, no term.

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**GENERAL SERVICE RATE  
SCHEDULE "G"**

AVAILABLE for service to general service customers with normal maximum electrical capacity requirements of 10 kW or less per month. When a customer being served under this Schedule establishes or exceeds a normal maximum requirement of 10 kW per month, the customer will be placed on the appropriate general service Schedule.

**MONTHLY RATE**

Customer Charge - \$ 5.00 per month

**Energy Charge**

(D)	First 400 kilowatt-hours.....	\$ 0.10968 per kilowatt-hour
(D)	All additional-kilowatt-hours .....	\$ 0.09659 per kilowatt-hour

**MINIMUM BILL**

The minimum bill per month shall not be less than:

- (a) \$ 5.00, or
- (b) \$ 2.41 per kilowatt of capacity necessary to serve the Customer.

Also, the Company may install a demand meter on connections whose usage exceeds 5,000 kWh in any month. If a demand meter has been installed, the maximum reading of the demand meter in the previous 12 months will determine the kilowatt capacity necessary to serve. For connections without a demand meter, a kilowatt of capacity necessary to serve under this schedule shall be defined as the maximum number of kilowatt-hours used in the current month, or in any of the previous 12 months, divided by 120. If a Customer can demonstrate to the Company that his calculated demand is unreasonable, then the Company may change such demand or demands, and may elect to install a demand meter.

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**CHURCH AND SCHOOL HEATING RATE  
SCHEDULE "CSH"**

AVAILABLE for electric heating service in a school, church, or public library, where electricity is used as the sole means of such heating, subject to the definition and conditions stated herein. This schedule is closed except to customers transferred from Rate Schedule "C-A" on July 1, 2000.

**MONTHLY RATE**

(D) All kilowatt-hours.....\$ 0.08633 per kilowatt-hour

**MINIMUM BILL**

None.

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company as specified in Rule No. 20 of "Rules and Regulations Covering the Supply of Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet No. 5-1.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 7-C-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge -2 shall apply, as outlined on Sheet Nos. 7-D-1 and 7-E-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 7-F-1 of this tariff.

**VEGETATION MANAGEMENT SURCHARGE**

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 7-G-1 of this tariff.

**TERMS OF PAYMENT**

Bills are due and payable on presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within twenty (20) days from the date mailed.

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**GENERAL SERVICE RATE  
SCHEDULE "E"**

AVAILABLE at a single place of use for any purpose, except that Service shall not be available for Standby or Maintenance Service such as that required for Alternative Generation Facilities.

**MONTHLY RATE**

Customer Charge - \$ 40.00 per month

(I)	Demand Charge	
	All kilowatts.....	\$ 13.63 per kilowatt
(D)	Energy Charge	
	All kilowatt-hours.....	\$ 0.04573 per kilowatt-hour

**MINIMUM BILL**

\$ 4.00 per kilowatt of maximum billing demand established during the preceding 12 months. Such demand shall not be less than 50% of the kilowatt capacity set forth in the Electric Service Agreement, nor less than 10 kilowatts.

**VOLTAGE DISCOUNT**

When service is furnished at a voltage greater than 2,000 volts, a voltage discount of \$0.25 per kilowatt of demand will be applied to all kilowatts of demand, but in no case will the amount of the minimum bill be hereby reduced.

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 20 of "Rules and Regulations Covering the Supply of Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet No. 5-1.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 7-C-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 7-D-1 and 7-E-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 7-F-1 of this tariff.

**VEGETATION MANAGEMENT SURCHARGE**

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 7-G-1 of this tariff.

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**LIGHT AND POWER SERVICE  
(High Load Factor)  
SCHEDULE "PH"**

AVAILABLE at a single place of use for any purpose when all deliveries are at the standard distribution voltage of the immediate area as designated by Company but not less than 1,000 volts, and through one metering point, except that Service shall not be available for Standby or Maintenance Service such as that required for Alternative Generation Facilities. An Electric Service Agreement shall be executed.

**MONTHLY RATE**

	Demand Charge	
(I)	First 500 kilowatts .....	\$ 16.49 per kilowatt
(I)	All additional kilowatts .....	\$ 15.03 per kilowatt
	All kilovars in excess of 35% of the current kilowatt billing demand .....	0.40 per kilovar
	Energy Charge	
(D)	All kilowatt-hours .....	\$ 0.04057 per kilowatt-hour

**MINIMUM BILL**

The minimum monthly bill shall not be less than the highest of the following:

1. The demand charge, or
2. \$ 2.70 per KW of the highest billing demand established during the preceding 12 months, or
3. \$ 2.70 times 50% of the kilowatt capacity set forth in the Agreement.

**VOLTAGE DISCOUNT**

When service is furnished at a voltage greater than 15,000 volts, a voltage discount of \$0.25 per kilowatt of demand will be applied to all kilowatts of demand, but in no case will the amount of the minimum bill be hereby reduced.

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 20 of "Rules and Regulations Covering the Supply of Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet No. 5-1.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 7-C-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 7-D-1 and 7-E-1 of this tariff.

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**POWER SERVICE - LARGE PRIMARY  
SCHEDULE "PP"**

AVAILABLE to single point of delivery for balanced three-phase power loads of not less than 3,000 kilovolt-amperes (1,000 kilovolt-amperes for Customers served hereunder prior to July 22, 1980) at prevailing voltages as designated by Company but not less than 15,000 volts. Also available at Company standard voltages between 10,000 and 15,000 volts where Company elects to supply service by one transformation from an adjacent transmission line operated at a voltage in excess of 100,000 volts. Service shall not be available for Standby or Maintenance Service such as that required for Alternative Generation Facilities. An Electric Service Agreement shall be executed.

**MONTHLY RATE**

Customer Charge - \$500.00 per month

**Demand Charge**

- (I) First 1,000 kilovolt-amperes.....\$ 14,383 per kilovolt-ampere  
(I) All additional kilovolt-amperes .....\$ 12,229 per kilovolt-ampere

**Energy Charge**

- (D) All kilowatt-hours.....\$ 0.03518 per kilowatt-hour

**Economic Stability Credit**

All kilowatt-hours (Effective for service rendered 1-1-14 through 12-31-15).. (\$0.00025) per kilowatt-hour

**VOLTAGE DISCOUNT**

When service is furnished at a voltage greater than 100,000 volts, a voltage discount of \$0.50 per kilovolt-ampere will be applied to all kilovolt-amperes of billing demand.

**LINE VOLTAGE CHARGE**

When Customer desires to take service under this schedule at a voltage between 10,000 and 15,000 volts at a service point located more than 700 feet from Company's substation serving Customer, an additional line voltage charge shall apply. Such charge shall be \$ 0.40 per kilovolt-ampere of billing demand. This additional line voltage charge shall not apply to Customers served on this schedule prior to June 12, 1991.

**DETERMINATION OF DEMAND AND BILLING DEMAND**

**Demand**

The maximum kilovolt-amperes integrated over any 15-minute interval shall constitute the demand.

**Billing Demand**

The billing demand for any month shall be the maximum demand measured during on-peak hours as hereinafter defined plus 25% of the excess of the maximum off-peak demand over such on-peak demand but in no case shall be less than the highest of the following:

- (a) 3,000 kilovolt-amperes.
- (b) 50% of the kilovolt-ampere capacity specified in the Electric Service Agreement.
- (c) 70% of the maximum billing demand for the 12 months prior to the billing month.

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**OUTDOOR LIGHTING SERVICE  
SCHEDULE "OL"**

**AVAILABILITY**

Available throughout the entire territory served by the Company for lighting service contracted prior to November 26, 1997 for outdoor lighting supplied from the existing overhead secondary Distribution System of the Company and contracted for by a private Customer. The rating of lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

**MONTHLY RATE**

- (D) A. For each 9,500 lumen (100 watt) high pressure sodium lamp (51 Kwh).....\$ 8.18 per lamp  
Company will provide lamp, photo-electric relay control equipment, fixture and  
upsweep arm not over 4 feet in length, and will mount same on an existing pole carrying  
secondary circuits.
- (D) B. For each 8,150 lumen (175 watt) mercury vapor lamp (74 Kwh) .....\$ 10.37 per lamp  
Company will provide lamp, photo-electric relay control equipment, fixture and upsweep arm not  
over 4 feet in length, and will mount same on an existing pole carrying secondary circuits.
- (D) C. For each 22,000 lumen (200 watt) high pressure sodium lamp (86 Kwh).....\$ 12.68 per lamp  
Company will provide lamp, photo-electric relay control equipment, fixture and upsweep arm not  
over 6 feet in length, and will mount same on an existing pole carrying secondary circuits.
- (D) D Restricted to installations as of November 10, 1994  
For each 21,500 lumen (400 watt) mercury vapor lamp (162 Kwh) .....\$ 17.02 per lamp  
Company will provide lamp, photo-electric relay control equipment, fixture and upsweep arm not  
over 6 feet in length, and will mount same on an existing pole carrying secondary circuits.
- E. When facilities, in addition to those specified in paragraphs A., B., C., and D. are required to provide outdoor  
lighting service, the Customer will pay in advance the cost of installing all additional facilities. For those  
facilities installed prior to October 3, 1985, where the Company provided facilities at a monthly rental  
of \$1.74 for each standard distribution wood pole required, and \$0.012 per foot for each foot of span length  
of wires required, and \$1.74 for each KVA of transformer capacity installed, such additional monthly charges  
will continue.
- F. The Customer may elect to own and maintain poles and secondary circuits on his property to accommodate  
the installation of the outdoor lighting fixture. Such poles and circuits shall meet Company specifications.

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**PRIVATE OUTDOOR AREA LIGHTING SERVICE  
SCHEDULE "AL"**

**AVAILABILITY**

Available only for installations served prior to November 11, 1994 for lighting service sold for pole mounted outdoor area lighting supplied from the existing secondary Distribution System of the Company contracted for by a private Customer. The rating of lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

**MONTHLY RATE**

**LIGHTING FIXTURE**

	Nominal Watts	Nominal Lumens	KWH	Floodlighting (Overhead or Underground Service)
	<u>Mercury Vapor</u>			
(D)	400	21,500	162	\$ 17.02
(D)	1,000	60,000	386	31.16
	<u>High Pressure Sodium</u>			
(D)	400	50,000	167	19.55
	<u>Quartz Iodine</u> - Restricted to Installations as of November 26, 1979			
(D)	500		176	18.32

**POLES - Restricted to Installations as of October 3, 1985**

<u>Length</u>	<u>Wood Standard</u>
30 foot	\$ 1.74
35 foot	2.42
40 foot	2.60

**OVERHEAD CIRCUIT - Restricted to installations as of October 3, 1985.**

\$ 0.012 per foot for each foot of span length.

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**PRIVATE OUTDOOR AREA LIGHTING SERVICE  
SCHEDULE "AL" (Concluded)**

## GENERAL (Continued)

Customer shall select and the Company agree to the location of all lights and poles under the provisions of this Rate Schedule. Lights and poles will be relocated only on payment by the Customer of the cost of such relocation. Pole locations shall conform to all safety standards, state and municipal regulations. Customer shall be responsible for all damages to, or loss of, the Company's property located on the Customer's premises unless resulting from causes beyond the Customer's control.

When the Customer requires the Company to furnish facilities in excess of those supplied by the Company, the Customer shall pay the Company's excess investment, with the maintenance of the special equipment subject to (1) time and ability to obtain replacement, and (2) advance payment of the then excess cost over standard for each replacement.

For installations prior to October 3, 1985, when lighting is served from an overhead circuit, the Customer may elect to own and maintain the poles and circuits upon which the Company will install the lighting fixture. Customer owned facilities shall be approved by the Company.

For overhead installations on or after October 3, 1985, the Customer shall own, install, and maintain all facilities not included in the Company's standard installation.

The standard overhead installation includes mounting area lighting equipment on an existing wood pole carrying secondary circuits.

When lighting is served from an underground circuit the Customer shall own, install and maintain all necessary concrete bases for poles to be installed in accordance with Company specifications. The Customer shall also own, install and maintain all facilities including circuits, conduit and pedestals necessary to supply service to the base of the pole.

## CUSTOMER OWNED EQUIPMENT - COMPANY OPERATES AND MAINTAINS

Whenever the Customer furnishes, installs and owns the entire lighting system using equipment approved by and installed in a manner acceptable to the Company, the Company may, at its discretion, operate and maintain the system at the following monthly rates.

	<u>LAMP SIZE IN NOMINAL WATTS</u>	<u>TYPE OF LAMP</u>	<u>TYPE FIXTURE BRACKET</u>
(D)	400	Mercury Vapor	\$ 12.05
(D)	1,000	" "	25.83

The Company's responsibility under the aforementioned charges for maintaining the Customer owned lighting system is limited to photo control, relamping, cleaning fixtures and painting poles requiring paint. When the Customer's equipment is intermediate in size to those listed above the Customer shall pay the monthly charges applicable to the next larger size.

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**STREET AND HIGHWAY LIGHTING SERVICE  
SCHEDULE "MSL"**

New service under provisions of this schedule limited to service contracted for prior to November 26, 1997.

**1. COMPANY OWNED AND MAINTAINED EQUIPMENT**

**AVAILABILITY**

Available throughout the entire territory served by the Company for lighting service sold for the lighting of public streets, public highways and other public outdoor areas in municipalities, governmental units and unincorporated communities where such service can be supplied from the existing general Distribution System.

This schedule is also applicable within private property which is open to the general public such as private walkways, streets and roads, when the property and buildings are under common ownership and when supply from the Company's Distribution System is directly available and when lighting service is contracted for by the owner thereof. The rating of lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

**MONTHLY RATE**

	<u>Lamp Size</u>		<u>Kwh</u>	<u>Overhead Supply</u>		<u>Underground Supply</u>	
	<u>Nominal Watts</u>	<u>Nominal Lumens</u>		<u>Wood Pole</u>	<u>Metal Pole</u>	<u>Standard Pole</u>	
						<u>Low Mounting</u>	<u>High Mounting</u>
	High Pressure Sodium						
(D)	70	5,800	37	\$ 8.02		\$ 14.68	\$ 23.51
(D)	100	9,500	51	8.86		15.53	24.58
(D)	200	22,000	86	12.68			28.41
(D)	400	50,000	167	19.55	\$ 35.28		35.28

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**STREET AND HIGHWAY LIGHTING SERVICE  
SCHEDULE "MSL" (Continued)**

## MONTHLY RATE (Continued)

<u>Lamp Size</u>			<u>Overhead Supply</u>		<u>Underground Supply</u>		<u>Multiple Units</u>
<u>Nominal</u>	<u>Nominal</u>	<u>Kwh</u>	<u>Wood</u>	<u>Metal</u>	<u>Standard Pole</u>		<u>For Each</u>
<u>Watts</u>	<u>Lumens</u>		<u>Pole</u>	<u>Pole</u>	<u>Low</u>	<u>High</u>	<u>Additional</u>
					<u>Mounting</u>	<u>Mounting</u>	<u>Fixture Per Pole</u>
<u>High Pressure Sodium - Rectangular Enclosed Fixture</u>							
(D)	100	9,500	51			\$ 34.63	\$ 15.90
(D)	200	22,000	86			37.11	18.38
(D)	400	50,000	167			42.31	23.57
<u>Mercury Vapor</u>							
(D)	175	8,150	74	\$ 10.37	\$ 13.37		
<u>Mercury Vapor - Restricted to installations as of November 1, 1990</u>							
(D)	250	11,500	103	12.66		\$ 15.86	
(D)	400	21,500	162	17.02	\$ 23.57	23.57	
<u>Mercury Vapor - Continuous Burn - Restricted to installations as of November 1, 1990</u>							
(D)	250	11,500	215	20.26			

All lamps are lighted from dusk to dawn every night, or for approximately 4,200 hours per annum. However, at the request of the Customer, individual lamps may be operated continuously 24 hours per day. The monthly rate for each light continuously operated shall be the applicable rate above plus 60% of the base overhead supply wood pole monthly rate.

## MINIMUM CHARGE

Rate Schedule billing.

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**STREET AND HIGHWAY LIGHTING SERVICE  
SCHEDULE "MSL" (Continued)**

**2. CUSTOMER-OWNED AND MAINTAINED EQUIPMENT - COMPANY SUPPLIES UNMETERED ENERGY**

**AVAILABILITY**

Available for lighting service sold for the lighting of public streets, public highways and other public outdoor areas in municipalities, governmental units and incorporated communities consisting of Customer-owned foundations, posts, brackets and luminaires when the electric energy supplied to such equipment is unmetered and furnished by the Company from the existing general distribution system.

This schedule is also applicable within private property such as private walkways, streets, roads, and when supply from the Company's Distribution System is directly available and when lighting service is contracted for by the owner thereof. The rating of lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

Available for high pressure sodium light sources only that are served from a low voltage (120 volt) electric circuit.

This rate is not available to serve Customer-owned lighting systems in an area where there will be a mix of Company-owned and Customer-owned systems.

**MONTHLY RATE**

The Company's supply of unmetered energy to the Customer's high pressure sodium street lighting system will be at the following rates:

	<u>Lamp Size</u>		<u>Kwh</u>	<u>Monthly Rate</u>
	<u>Nominal Watts</u>	<u>Nominal Lumens</u>		
(D)	70	5,800	37	\$ 4.74
(D)	100	9,500	51	\$ 5.65
(D)	200	22,000	86	\$ 7.99
(D)	400	50,000	167	\$ 13.41

When the Customer's equipment is intermediate in size to those listed above, the Customer shall pay the monthly rate applicable to the next larger size.

(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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STEVEN E. STRAH, PRESIDENT

THE POTOMAC EDISON COMPANY

Sixth Revision of  
Original Sheet No. 17-1  
P.S.C. W, Va. No. 3  
Canceling  
Fifth Revision of  
Original Sheet No. 17-1

**STREET AND HIGHWAY LIGHTING SERVICE  
SCHEDULE "SL"**

**AVAILABILITY**

Available only for incandescent lighting installations served on June 1, 1974 for the lighting of public streets, public highways and other public outdoor areas in municipalities and unincorporated communities where service is supplied from the existing Distribution System and where the Company owns and maintains all equipment. Service will be supplied from dusk to dawn each night.

Existing fixtures will not be replaced at the end of their useful life if replacement cannot be secured through normal supply channels. The Company will be the sole judge as to the end of the useful life. The rating of lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

MONTHLY RATE		Size in Lumens				
Type		<u>1,000</u>	<u>2,500</u>	<u>4,000</u>	<u>6,000</u>	<u>10,000</u>
		37	71	115	158	242
(D) Mast Arm, Bracket, or Center Suspension	\$ 3.64	\$ 5.57	\$ 7.52			
(D) Ornamental or White Way (Wood Poles - Overhead)			8.04	\$ 10.02	\$ 14.53	
(D) White Way (Underground - See General)				11.29		

**MINIMUM CHARGE**

Rate Schedule billing.

**PAYMENT FOR SCHEDULE**

Bills are due and payable upon presentation.

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company as specified in Rule No. 20 of "Rules and Regulations Covering the Supply of Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet No. 5-1.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 7-C-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 7-D-1 and 7-E-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 7-F-1 of this tariff.

(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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Original Sheet No. 19-4

**ALTERNATIVE GENERATION SCHEDULE  
SCHEDULE "AGS" (Continued)**

**INTERRUPTIBLE POWER PROVISIONS**

**Obligations**

Interruptible Maintenance or Interruptible Standby Power shall be interrupted when, in the sole judgment of the Company, any production, transmission, or distribution limitations exist. During an interruption period, the Customer's total load must be reduced to no more than the sum of the firm capacity, if any, specified in the Electric Service Agreement under which Supplementary Power is provided plus the Firm Standby Power Agreement Capacity, if the Customer is using Firm Standby Power at the time, plus the Firm Maintenance Power Agreement Capacity, if any, which may be in effect at the time. The interruption period shall begin with the second full demand interval after commencement of an interruption by the Company and continuing through the demand interval immediately preceding termination of that interruption.

**Penalty**

The maximum by which the Customer's kilowatt demands exceed the sum of the Customer's firm capacities (i.e., the sum of the Customer's Supplementary, Maintenance, and Standby Firm capacities as applicable) during each interruption period shall be subject to a penalty charge. Only one such penalty shall be assessed per interruption period. The first time that the Customer is notified by the Company to interrupt service and the Customer fails to reduce load to not more than the sum of its firm capacities, a penalty of \$10 per kilowatt shall be applied to those kilowatts in excess of firm capacities. Upon the second occurrence of such a failure to interrupt, a penalty of \$10 per kilowatt calculated as set forth above shall be applied and interruptible service shall not be available to the Customer for the next two years. Upon the third occurrence of such a failure to interrupt, a \$10 per kilowatt penalty shall be applied and interruptible service shall no longer be available to the Customer.

**MONTHLY RATE**

**Demand Charge**

		Service Voltage		
		<u>0-15,000</u>	<u>15,000-100,000</u>	<u>Over 100,000</u>
Firm Standby Power				
(I)	First 100 Kilowatts of Standby Power			
	Billing Demand or Less Net per KW .....	\$ 6.400	\$ 4.574	\$ 3.672
(I)	Additional Kilowatts of Standby Power			
	Billing Demand Net per KW .....	5.370	3.540	2.635
	All Kilovars of Standby Reactive			
	Kilovolt-Ampere Demand in Excess of			
	35% of the Current Kilowatt Standby			
	Power Billing Demand Net per Kilovar .....	0.40	0.40	0.40

(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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Canceling  
Sixth Revision of  
Original Sheet No. 19-5

**ALTERNATIVE GENERATION SCHEDULE  
SCHEDULE "AGS" (Continued)**

		Service Voltage		
		0-15,000	15,000-100,000	Over 100,000
Interruptible Standby Power				
(I)	First 100 Kilowatts of Interruptible			
	Standby Power Billing Demand Net per KW .....	\$ 6.125	\$ 4.300	\$ 3.398
(I)	Additional Kilowatts of Interruptible			
	Standby Power Billing Demand Net per KW .....	5.096	3.265	2.361
All Kilovars of Standby Reactive				
Kilovolt-Ampere Demand in Excess of				
35% of the Current Kilowatt Interruptible				
Standby Power Billing Demand Net per Kilovar.....		0.40	0.40	0.40
Firm or Interruptible Maintenance Power				
(I)	All Kilowatts of Maintenance Power			
	Billing Demand Net per KW .....	\$ 5.096	\$ 3.265	\$ 2.361
(I)	All Kilovars of Maintenance Reactive			
	Kilovolt-Ampere Demand in Excess of			
35% of the Current Kilowatt Maintenance				
Power Billing Demand Net per Kilovar.....		0.40	0.40	0.40
Energy Charge				
(I)	All Standby and Maintenance Kilowatt-hours.....	\$ 0.03206 net per kilowatt-hour		

**TERMS OF PAYMENT**

Bills are due and payable upon presentation. A late payment charge of 2% of the net bill will be added to each bill not paid in full within 20 days from the date mailed.

**DETERMINATION OF DEMANDS**

("Normal alternative generation" as used below is defined above in Types of Supply.)

(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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THE POTOMAC EDISON COMPANY

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Fifth Revision of  
Original Sheet No. 22-1

**OUTDOOR LIGHTING  
EQUIPMENT, MAINTENANCE, AND UNMETERED SERVICE  
SCHEDULE EMU**

**AVAILABILITY**

Available for roadway and other outdoor lighting supplied from overhead or underground secondary distribution system of the Company and contracted for by a Customer for lighting accessible areas.

**MONTHLY RATE**

**OVERHEAD SERVICE**

High Pressure Sodium - Vertical Open Lens Luminaire ("OL")

		Installation Requires a Pole <sup>1</sup>	Installation on Existing Pole
(D)	9,500 Lumen - 100 watt..... 51 kWh .....	\$ 17.87 net each .....	\$ 8.18 net each

Mercury Vapor - Horizontal Luminaire (Cobra Head)

(D)	8,150 Lumen - 175 watt..... 74 kWh .....	\$ 10.37 net each
-----	--	-------------------

High Pressure Sodium - Horizontal Luminaire (Cobra Head)

(D)	9,500 Lumen - 100 watt..... 51 kWh .....	\$ 8.86 net each
(D)	22,000 Lumen - 200 watt..... 86 kWh .....	\$ 12.68 net each
(D)	50,000 Lumen - 400 watt..... 167 kWh .....	\$ 19.55 net each

Metal Halide - Horizontal Luminaire (Cobra Head)

(D)	36,000 Lumen - 400 watt .... 157 kWh .....	\$ 22.23 net each
(D)	90,000 Lumen - 1000 watt .... 379 kWh .....	\$ 42.81 net each

High Pressure Sodium Floodlight

(D)	22,000 Lumen - 200 watt ..... 86 kWh .....	\$ 12.68 net each
(D)	50,000 Lumen - 400 watt .... 167 kWh .....	\$ 19.55 net each

Metal Halide Floodlight

(D)	36,000 Lumen - 400 watt..... 157 kWh .....	\$ 22.23 net each
(D)	90,000 Lumen - 1000 watt..... 379 kWh .....	\$ 42.81 net each

**UNDERGROUND SERVICE**

High Pressure Sodium - Colonial Post Top Luminaire 14' Mounting Height

(D)	9,500 Lumen - 100 watt..... 51 kWh .....	\$ 15.53 net each
-----	--	-------------------

Metal Halide - Colonial Post Top Luminaire 14' Mounting Height

(D)	11,600 Lumen - .. 175 watt..... 74 kWh .....	\$ 20.62 net each
-----	--	-------------------

<sup>1</sup> Mounted on a 30' direct burial pole  
(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary  
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Fifth Revision of  
Original Sheet No. 22-2

**OUTDOOR LIGHTING  
EQUIPMENT, MAINTENANCE, AND UNMETERED SERVICE  
SCHEDULE EMU (Continued)**

UNDERGROUND SERVICE (Continued)

High Pressure Sodium - Horizontal Luminaire (Cobra Head) 30' Mounting Height

		Single Luminaire Per Pole	Each Additional Luminaire Per Pole
(D)	9,500 Lumen - 100 watt ..... 51 kWh .....	\$ 24.58 net each .....	\$ 8.86 net each
(D)	22,000 Lumen - 200 watt ..... 86 kWh .....	\$ 28.41 net each .....	\$ 12.68 net each
(D)	50,000 Lumen - 400 watt ..... 167 kWh .....	\$ 35.28 net each .....	\$ 19.55 net each

Metal Halide - Horizontal Luminaire (Cobra Head) 30' Mounting Height

		Single Luminaire Per Pole	Each Additional Luminaire Per Pole
(D)	36,000 Lumen - 400 watt..... 157 kWh .....	\$ 37.96 net each .....	\$ 22.23 net each
(D)	90,000 lumen - 1,000 watt .... 379 kWh .....	\$ 58.54 net each .....	\$ 42.81 net each

High Pressure Sodium - Rectangular Luminaire (Shoe Box) 30' Mounting Height

		Single Luminaire Per Pole		Each Additional Luminaire Per Pole
		With base <sup>1</sup>	No base	
(D)	9,500 Lumen - 100 watt ..... 51 kWh .....	\$ 34.63 net each .....	\$ 27.60 .....	\$ 15.90 net each
(D)	22,000 Lumen - 200 watt ..... 86 kWh .....	\$ 37.11 net each .....	\$ 30.08 .....	\$ 18.38 net each
(D)	50,000 Lumen - 400 watt ..... 167 kWh .....	\$ 42.31 net each .....	\$ 35.28 .....	\$ 23.57 net each

Metal Halide - Rectangular Luminaire (Shoe Box) 30' Mounting Height

		With base <sup>1</sup>	No base	Each Additional Luminaire Per Pole
(D)	36,000 Lumen - 400 watt ..... 157 kWh .....	\$ 44.49 net each .....	\$ 37.48 .....	\$ 25.78 net each

Metal Halide - Rectangular Area Luminaire (Shoe Box) 40' Mounting Height

(D)	90,000 Lumen -1000 watt ..... 379 kWh .....	\$ 63.57 .....	\$ 47.44 net each
-----	---	----------------	-------------------

Note: The rating of lamps in lumens is for identification purposes only and shall approximate the manufacturer's standard rating. All luminaires are lighted from dusk to dawn aggregating approximately 4,200 hours per year.

<sup>1</sup> With base includes the installation of a non-concrete power installed foundation where soil conditions warrant its application.

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Original Sheet No. 23-1  
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Canceling  
Fifth Revision of  
Original Sheet No. 23-1

**OUTDOOR LIGHTING  
MAINTENANCE AND UNMETERED SERVICE  
SCHEDULE MU**

**AVAILABILITY**

Available for high pressure sodium, mercury vapor, metal halide and incandescent lighting.

**MONTHLY RATE**

		Installed On Customer-Owned Pole	Installed On Company's Distribution System
	<u>High Pressure Sodium Vapor</u>		
(D)	9,500 Lumen - 100 watt .....51 kWh .....	\$ 5.65 net each .....	\$ 6.76 net each
(D)	22,000 Lumen - 200 watt .....86 kWh .....	\$ 7.99 net each .....	\$ 9.10 net each
(D)	50,000 Lumen - 400 watt ...167 kWh .....	\$ 13.41 net each .....	\$ 14.52 net each
	<u>Mercury Vapor</u>		
(D)	8,150 Lumen - 175 watt .....74 kWh .....	\$ 7.09 net each .....	\$ 8.21 net each
(D)	11,500 Lumen - 250 watt ...103 kWh .....	\$ 9.09 net each .....	\$ 10.18 net each
(D)	21,500 Lumen - 400 watt ...162 kWh .....	\$ 12.05 net each .....	\$ 13.15 net each
(D)	60,000 Lumen - 1000 watt ...386 kWh .....	\$ 25.83 net each .....	\$ 26.94 net each
	<u>Metal Halide</u>		
(D)	11,600 Lumen - 175 watt .....74 kWh .....	\$ 8.40 net each .....	\$ 9.50 net each
(D)	15,000 Lumen - 250 watt ...103 kWh .....	\$ 10.53 net each .....	\$ 11.63 net each
(D)	36,000 Lumen - 400 watt ...157 kWh .....	\$ 14.05 net each .....	\$ 15.16 net each
(D)	90,000 Lumen - 1000 watt ...379 kWh .....	\$ 29.93 net each .....	\$ 31.04 net each
	<u>Incandescent</u>		
(D)	1,000 Lumen - 100 watt .....37 kWh .....	\$ 6.06 net each .....	\$ 7.16 net each
(D)	2,500 Lumen - 200 watt .....71 kWh .....	\$ 8.35 net each .....	\$ 9.46 net each
(D)	4,000 Lumen - 325 watt ...115 kWh .....	\$ 11.42 net each .....	\$ 12.53 net each
(D)	6,000 Lumen - 450 watt ...158 kWh .....	\$ 14.40 net each .....	\$ 15.50 net each

Note: The rating of the lamps in lumens is for identification and shall approximate the manufacturer's standard rating.

**Late Payment Charge**

2% of the bill on the above charges. See Tariff Rule 11(d).

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company as specified in Rule No. 20 of "Rules and Regulations Covering the Supply of Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet No. 5-1.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 7-C-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 7-D-1 and 7-E-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 7-F-1 of this tariff.

(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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STEVEN E. STRAH, PRESIDENT

THE POTOMAC EDISON COMPANY

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Canceling  
Eighth Revision of  
Original Sheet No. 33-1

**YARD LIGHTING SERVICE RATE  
SCHEDULE "Y-6"**

**AVAILABILITY**

Available to Customers of the Company for the purpose of providing rural homes, schools, churches, camps, business, etc. with an outside modern overhead light that will afford more security, safety, convenience and pleasure to Customers on a flat monthly charge. All fixtures will be equipped with a photo-electric cell to provide dusk-to-dawn service and will be connected ahead of the meter. This schedule is available only for installations served prior to January 1, 2011

**SERVICE AGREEMENT**

- A. Upon application, the Company will install and maintain an outside overhead light on the premises of the Customer. The Customer must agree to keep the light for at least 12 months.
- B. The Customer shall notify the Company when fixture fails to operate. Fixture will be serviced within 48 hours of such notification under normal conditions.
- C. The Customer will be billed for the yard light each billing period and such charges added to the regular electric bill at the following rates:.

	<u>Type of Light</u>	<u>Number of Lights</u>	<u>Approximate Lumens</u>	<u>Wattage</u>	<u>kWh</u>	<u>Rate per Unit per Month</u>
(D)	High Pressure Sodium	1-3 Lights	7,000	100	47	\$ 13.41
(D)	High Pressure Sodium	4-10 Lights	7,000	100	47	\$ 12.84
(D)	High Pressure Sodium	11 or More	7,000	100	47	\$ 12.42
(D)	High Pressure Sodium	Any number	20,000	250	100	\$ 20.42
(D)	High Pressure Sodium	Any number	50,000	400	150	\$ 20.76
(D)	Mercury Vapor	Any number	8,150	175	70	\$ 13.55

**LOCAL TAX ADJUSTMENT**

Within municipalities or political subdivisions which impose taxes based upon the amount of electric service sold or revenues received by the Company, as specified in Rule No. 20 of "Rules and Regulations Covering the Supply of Electric Service," there shall be added to the total bill a surcharge equal to the percentage shown on Sheet No. 5-1.

**ENVIRONMENTAL CONTROL CHARGE NORMALIZATION SURCHARGE**

An Environmental Control Charge Normalization Surcharge shall apply, as outlined on Sheet No. 7-C-1 of this tariff.

**ENVIRONMENTAL CONTROL CHARGE / ENVIRONMENTAL CONTROL CHARGE-2**

An Environmental Control Charge and Environmental Control Charge-2 shall apply, as outlined on Sheet Nos. 7-D-1 and 7-E-1 of this tariff.

**EEC PROGRAM COST RECOVERY RATE**

An EEC Program Cost Recovery Rate shall apply, as outlined on Sheet No. 7-F-1 of this tariff.

**VEGETATION MANAGEMENT SURCHARGE**

A Vegetation Management Surcharge shall apply, as outlined on Sheet No. 7-G-1 of this tariff.

(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

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Effective: September 1, 2017

ISSUED BY  
STEVEN E. STRAH, PRESIDENT

**ASSET PURCHASE AGREEMENT**

dated as of

March 6, 2017

by and

between

Allegheny Energy Supply Company, LLC

as Seller

and

Monongahela Power Company

as Buyer

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## **EXHIBITS**

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Exhibit B	Form of Bill of Sale
Exhibit C	Form of Deed
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## **SCHEDULES**

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## ASSET PURCHASE AGREEMENT

This Asset Purchase Agreement ("**Agreement**") is dated as of March 6, 2017 (the "**Execution Date**") between Allegheny Energy Supply Company, LLC, a Delaware limited liability company (the "**Seller**") and Monongahela Power Company, an Ohio corporation (the "**Buyer**" and, together with Seller, the "**Parties**").

### RECITALS:

A. Seller owns and operates the Pleasants Power Station, comprised of two 650 megawatt coal-fired units, located in Pleasants County, West Virginia (the "**Generating Facility**"); and

B. Seller desires to sell and transfer the Purchased Assets and Assumed Liabilities to Buyer, and Buyer desires to purchase the Purchased Assets and assume the Assumed Liabilities, upon the terms and conditions set forth in this Agreement;

**NOW, THEREFORE**, in consideration of the mutual promises herein made and the mutual benefits to be derived therefrom, and in considerations of the representations, warranties, and covenants contained herein, the Parties agree as follows:

### ARTICLE 1

#### DEFINITIONS, RULES OF CONSTRUCTION AND ACCOUNTING TERMS

Section 1.01 **Definitions** The following terms and phrases, as used in this Agreement, have the following meanings:

"**Affiliate**" means, with respect to any Person, any other Person that directly, or indirectly through one or more intermediaries, Controls, is Controlled by, or is under Common Control with, such first Person.

"**Agreement**" is defined in the preamble.

"**Allocation**" is defined in Section 2.06(b).

"**Apportioned Obligations**" is defined in Section 8.02(b).

"**Assignment and Assumption Agreement**" means an Assignment and Assumption Agreement in substantially the form set forth on Exhibit A.

"**Assumed Contracts**" is defined in Section 2.01(d).

"**Assumed Liabilities**" is defined in Section 2.03.

"**Attorney Work Product**" means all notes, memoranda, correspondence or similar material reflecting the legal conclusions, recommendations, privileged communications or other work product of or to attorneys, whether they be in-house or external, acting as counsel to Seller or any of its Affiliates in matters relating in any way to any Excluded Asset or Excluded Liability.

***“Bill of Sale”*** means a Bill of Sale in substantially the form set forth on Exhibit B.

***“Book Value”*** means, as of any date, original cost (including related capital improvements, freight, commodity and handling (other than on-site handling)) less applicable depreciation and amortization, as reflected on Seller’s books and records, through such date.

***“Breach Notice”*** is defined in Section 11.01(d).

***“Budget”*** means the 2-year budget for the operation and maintenance of the Generating Facility as of January 31, 2017, as prepared and approved by Seller and posted in the Dataroom.

***“Business”*** means the operation of the Generating Facility as conducted as of the Execution Date.

***“Business Day”*** means any day other than Saturday, Sunday or a day on which United States national banks are authorized or required by Law to be closed.

***“Business Employee”*** means any employee of Seller who works at the Generating Facility or whose business activities relate primarily to the Business and whose name is set forth on Section 3.13 of the Seller Disclosure Schedule.

***“Buyer”*** is defined in the preamble.

***“Buyer Disclosure Schedules”*** means the schedules setting forth certain disclosures of Buyer, or qualifications or exceptions to any of Buyer’s representations or warranties set forth in ARTICLE 4, which schedules are delivered simultaneously with the execution and delivery of this Agreement.

***“Buyer Employee Plans”*** means any “employee benefit plan” (as such term is defined under ERISA), Multiemployer Plan, or any other compensation, stock option, restricted stock, bonus, incentive, severance, fringe benefit or retirement plan of any kind whatsoever, whether formal or informal, not included in the foregoing or providing benefits for, or for the welfare of, any or all of the current or former employees, agents, officers, directors or independent contractors of Buyer, and any of Buyer’s Subsidiaries, or their beneficiaries or dependents.

***“Buyer Environmental Liabilities”*** means any liabilities under Environmental Laws with respect to the Purchased Assets to the extent that such liabilities are based on facts or circumstances occurring on or after the Closing Date (and if occurring or arising only in part on or after the Closing Date, only to the extent of such part), provided that “Buyer Environmental Liabilities” includes all liabilities arising on or after the Closing Date from necessary compliance measures with Effluent Limit Guideline regulations under the Clean Water Act and the closure of McElroy’s Run impoundment.

***“Buyer Fundamental Representations”*** is defined in Section 10.01.

***“Buyer Material Adverse Effect”*** means an event, fact, circumstance, effect or occurrence that materially and adversely affects the ability of Buyer to consummate the Transactions or perform its obligations under the Transaction Agreements.

***“Buyer Objection”*** is defined in Section 5.07(b).

***“Claim”*** means any contest, action, petition, plea, charge, summons, citation, claim, assessment, demand, suit, complaint, inquiry, notice of violation, hearing, arbitration, proceeding or investigation, whether civil, criminal or administrative, or notice of any of the foregoing involving any Person.

***“Claim Notice”*** is defined in Section 10.03(b).

***“Closing”*** is defined in Section 2.08.

***“Closing Adjustment Amount”*** means an amount equal to the Book Value of Seller’s right, title and interest in and to the Inventory on the Closing Date.

***“Closing Date”*** means the date on which the Closing actually occurs.

***“Closing Payment”*** is defined in Section 2.06(a).

***“Closing Statement”*** is defined in Section 2.07(a).

***“Code”*** means the Internal Revenue Code of 1986, as amended.

***“Collective Bargaining Agreement”*** means any and all collective bargaining agreement or other labor agreement to which Seller is a party to or subject to.

***“Condemnation Value”*** is defined in Section 5.05.

***“Confidential Information”*** is defined in Section 7.09.

***“Confidentiality Agreement”*** means the Confidentiality Agreement, dated December 22, 2016, by and between Buyer and Seller, as amended.

***“Contract”*** means any agreement, contract, lease (including leases related to the Real Property), commitment or consensual obligation (whether written or oral) related to the Purchased Assets or the Business.

***“Control,”*** including corresponding meaning of the terms ***“Controlled by”*** and ***“under Common Control with,”*** means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, as trustee or executor, as general partner or managing member, by contract or otherwise.

***“Damages”*** means any damage, loss, penalty, liability, judgment, cost and expense, including reasonable expenses of investigation and reasonable attorneys’ fees and expenses in connection with any action, suit or proceeding.

***“Dataroom”*** means the online dataroom provided by SecureDoc under the project name “Pleasants.”

***“Deed”*** means a deed in substantially the form set forth on Exhibit C.

***“Direct Claim”*** is defined Section 10.03(b).

***“Emission Allowances”*** means all authorizations by a Governmental Body with jurisdiction over the Generating Facility with respect to any of the Purchased Assets under any of the Environmental Laws to emit specified units of pollutants or Hazardous Materials from the Generating Facility during a calendar year or other period of time, including (i) an authorization by the USEPA under the Acid Rain Program of the federal Clean Air Act or from the West Virginia Department of Environmental Protection under any trading program for nitrogen oxide (NO<sub>x</sub>) or sulfur dioxide (SO<sub>x</sub>), (ii) any other USEPA or state program for air emissions, or (iii) any pollution reduction program with a similar purpose, in each case regardless of whether the Governmental Body establishing such authorizations designates such authorizations by a name other than “allowances.”

***“Employee Plans”*** means any “employee benefit plan” (as such term is defined under ERISA) or any other compensation, stock option, restricted stock, bonus, incentive, severance, fringe benefit or retirement plan of any kind whatsoever, whether formal or informal, not included in the foregoing or providing benefits for, or for the welfare of, any or all of the current or former employees, agents, officers, directors or independent contractors of Seller, or any ERISA Affiliate, or their beneficiaries or dependents; provided, however, that for the avoidance of doubt, the term ***“Employee Plans”*** excludes all Buyer Employee Plans.

***“End Date”*** is defined in Section 11.01(a).

***“Enforceable”*** means, with respect to any Contract stated to be Enforceable by or against any Person, that such Contract is a legal, valid and binding obligation enforceable by or against such Person in accordance with its terms, except to the extent that enforcement of the rights and remedies created thereby is subject to bankruptcy, insolvency, reorganization, moratorium and other similar Laws of general application affecting the rights and remedies of creditors and to general principles of equity (regardless of whether enforceability is considered in a proceeding in equity or at law).

***“Environmental Claims”*** means any Claim, Order, or notice of noncompliance, liability or violation or any other notice by or from any Person that alleges (i) potential or actual violation, liability, Damages, personal injury or (ii) any other obligation to take any action or cease any action arising under any Environmental Law or Environmental Permit or exposure to Hazardous Materials.

***“Environmental Laws”*** means all Laws or Orders relating to human health and safety, wildlife (including any endangered, threatened or protected species), natural resources and pollution or protection of the environment (including ambient air, soil, surface water, groundwater, land surface or subsurface strata), including those relating to Releases or threatened Releases of any Hazardous Material, or otherwise relating to the management, manufacture, generation, processing, distribution, use, presence, control, treatment, storage, disposal, transport, importing, labeling or handling of any Hazardous Material including, but not limited to, the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. Section 9601 et seq.), the Hazardous Materials Transportation Act (49 U.S.C. Section 5101 et seq.), the Resource Conservation and Recovery Act (42 U.S.C. Section 6901 et seq.), the Clean Water Act (33 U.S.C. Section 1251 et seq.), the Clean Air Act (42 U.S.C. Section 7401 et seq.),

the Toxic Substances Control Act (15 U.S.C. Section 2601 et seq.), and the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Section 136 et seq.), each as amended, and the regulations promulgated pursuant thereto, and any similar state or local Laws, and the regulations promulgated pursuant thereto. For purposes of Article 3, "Environmental Laws" shall mean those in effect as of the Closing Date.

**"Environmental Permit"** means any Permit with respect to the Purchased Assets or the respective operations of the businesses of the Purchased Assets issued pursuant to or required under any applicable Environmental Law.

**"ERISA"** means the Employee Retirement Income Security Act of 1974, as amended, and the rules and regulations promulgated thereunder.

**"ERISA Affiliate"** means each trade or business (whether or not incorporated) that together with Seller is treated as or deemed a "single employer" pursuant to Sections 414 of the Code; provided, however, that **"ERISA Affiliate"** excludes Buyer and all Subsidiaries of Buyer.

**"Estimated Adjustment Amount"** is defined in Section 2.06(a).

**"Excluded Assets"** is defined in Section 2.02.

**"Excluded Liabilities"** is defined in Section 2.04.

**"Execution Date"** is defined in the preamble.

**"Facilities"** means the Generating Facility and all other ancillary facilities, improvements, buildings and other structures located on the Real Property (other than those improvements included in the definition of Real Property or Tangible Personal Property), which are set forth on Schedule 2.01(b).

**"FERC"** means the Federal Energy Regulatory Commission or any successor thereto, and any committee, division or unit thereof.

**"FERC Approval"** means the issuance of an order by FERC granting without material modification or condition all authorizations requested by Seller and Buyer under a joint application for authorization of proposed transaction under Section 203 of the Federal Power Act.

**"Financing"** is defined in Section 4.06.

**"FIRPTA Certificate"** means an affidavit of non-foreign status satisfying the requirements of Section 1445 of the Code from Seller.

**"GAAP"** means United States generally accepted accounting principles in effect from time to time.

**"Generating Facility"** is defined in the recitals.

**"Good Utility Practice"** means any of the applicable practices, methods and acts engaged in or approved by a significant portion of the electric utility industry operating coal-fired

generation stations during the relevant time period which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, would have reasonably been expected to accomplish the desired result at a reasonable cost consistent with Law, good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be a spectrum of practices, methods, or acts generally accepted in the region and shall include the maintenance of adequate fuel inventories, spare parts and major maintenance reserves for the Business.

***“Governmental Body”*** means any legislature, agency, bureau, branch, department, division, commission, court, tribunal, magistrate, justice, multi-national organization, quasi-governmental body, or other similar recognized organization or body of any federal, state, county, municipal, local, or foreign government or other similar recognized organization or body exercising similar powers or authority, including FERC and NERC.

***“Historical Financials”*** is defined in Section 3.07(a).

***“Hazardous Material”*** means any (i) substance, material, pollutant, contaminant, chemical or waste, the presence, emission or exposure to which is regulated, prohibited or forms the basis for liability under any applicable Environmental Law and (ii) petroleum or hydrocarbons in any form, and any derivative or by-product thereof, natural gas or natural gas products, radon gas, asbestos and asbestos-containing materials, mercury, radioactive materials, lead-based paint, and polychlorinated biphenyls.

***“Indebtedness”*** means all of the following obligations of Seller or its Subsidiaries: (i) obligations for indebtedness for borrowed money or for the deferred purchase price of property or services (including both short-term and long-term portions thereof) (other than current trade payables incurred in the ordinary course of business and payable in accordance with customary practices); (ii) obligations for indebtedness evidenced by a note, bond, debenture or similar instrument; (iii) obligations required to be classified and accounted for as capital leases on a balance sheet under GAAP; (iv) reimbursement obligations with respect to draws under outstanding letters of credit, surety bonds, acceptances and similar obligations created for the account of Seller; (v) any liability owed by Seller or its Subsidiaries to any Employee Plan subject to Title IV or any liability owed by Seller or its Subsidiaries on account of an Employee Plan subject to Title IV; (vi) any obligations under any commodity swap agreements, commodity cap agreements, interest rate cap agreements, interest rate swap agreements, foreign currency exchange agreements and other similar agreements; and (vii) guarantees of any of the foregoing of another Person, in each case together with all accrued interest thereon, if any, and any termination fees, prepayment penalties, “breakage” costs or similar payments associated with the repayment of or default under such Indebtedness.

***“Indemnification Claim”*** is defined in Section 10.03(b).

***“Indemnified Party”*** is defined in Section 10.03(a).

***“Indemnifying Party”*** is defined in Section 10.03(a).

***“Independent Accounting Firm”*** means such nationally recognized, independent accounting firm as is mutually appointed by Seller and Buyer for purposes of this Agreement.



***“Intellectual Property”*** means all intellectual property rights owned or used by Seller primarily in the conduct of the Business, including (i) patents and pending patent applications together with any and all continuations, divisions, reissues, extensions and renewals thereof; (ii) trade secrets, know-how, inventions, designs, formulae and processes, whether trade secrets or not; (iii) trade names, trademarks, service marks, internet domain names, logos, domain names, assumed names, brand names and all registrations and applications for any of the same, together with the goodwill of the business symbolized thereby; (iv) copyrights and any registrations and applications for any of the same; and (v) technology rights and licenses.

***“Intercompany Arrangements”*** is defined in Section 2.02(h).

***“Inventory”*** is defined in Section 2.01(k).

***“Knowledge of Buyer,” “Buyer’s Knowledge”*** or any other similar knowledge qualification with respect to Buyer means the actual knowledge or constructive knowledge (after reasonable inquiry) of the following individuals: Holly Kauffman and Jay Ruberto.

***“Knowledge of Seller,” “Seller’s Knowledge”*** or any other similar knowledge qualification with respect to Seller means the actual knowledge or constructive knowledge (after reasonable inquiry) of the following individuals: James Lash and Nicholas Fernandez.

***“Law”*** means any federal, state, local, municipal or foreign (including supranational) law (including common law), statute, ordinance, rule, code, directive, ruling, regulation, judgment, Order, injunction, decree, arbitration award, agency requirement, license or permit of any Governmental Body having or asserting jurisdiction over the Parties or any of their assets.

***“LIBOR”*** means an interest rate per annum equal to the rate per annum reported on the date two days prior to the first day of any relevant month on the Telerate Page 3750 (or if such screen shall cease to be publicly available, as reported on Reuters Screen page “LIBO” or by any other publicly available source of such market rate) for London interbank offered rates for U.S. dollar deposits for such month (or portion thereof).

***“Lien”*** means, with respect to any property or asset, any mortgage, lien, encumbrance, pledge, charge, security interest, warrant, claim, equitable interest, option, conditional sale or other title retention device or arrangement (including a capital lease), transfer or security for the payment of any Indebtedness, or restriction on the creation of any of the foregoing, whether relating to any property or right or the income or profits therefrom.

***“Material”*** when used with respect to Buyer, means material to the ability of Buyer to consummate the Transactions or perform its obligations under the Transaction Agreements, and when used with respect to Seller, means material to the Business taken as a whole.

***“Multiemployer Plan”*** means a “multiemployer plan” as defined in Sections 3(37)(A) and 4001(a)(3) of ERISA.

***“NERC”*** means the North American Electric Reliability Corporation or any successor thereto, and any committee, division or unit thereof.

**"Order"** means any order, ruling, decision, verdict, decree, writ, subpoena, mandate, precept, command, directive, consent, approval, award, judgment, injunction, or other similar determination or finding by, before, or under the supervision of any Governmental Body, arbitrator, or mediator.

**"Parties"** is defined in the preamble.

**"Permit"** means any permit, license, certificate, approval, consent, notice, waiver, franchise, registration, filing, accreditation, or other similar authorization required by any Law, Governmental Body, or Contract.

**"Permitted Liens"** means (i) inchoate construction, materialmen's, carriers', landlords', repairers' and other similar Liens arising or incurred in the ordinary course of business; (ii) Liens for Taxes that are not yet due and payable or which are being contested in good faith by appropriate proceedings, none of which contested matters is material; (iii) Liens disclosed on the title commitment or survey obtained by Buyer pursuant to Section 5.07 and not otherwise objected to or waived by Buyer pursuant to Section 5.07; and (iv) Liens set forth on Schedule 3.12.

**"Person"** means an individual, corporation, partnership, limited liability company, association, trust, an incorporated organization, or other entity or organization, including a Governmental Body and any department or agency thereof.

**"PJM"** means PJM Interconnection L.L.C., a FERC-approved regional transmission organization and energy market, or any successor thereto.

**"PJM Tariff"** means PJM's Open Access Transmission Tariff on file with FERC.

**"Pollution Control Bond Documents"** means, collectively, all documents, instruments and agreements evidencing, securing, or otherwise related to the Pollution Control Bonds, including the following: (a) Trust Indenture, dated as of November 1, 1977, between Pleasants County and The Bank of New York Trust Company, N.A. (as successor to Chase Manhattan Trust Company, National Association as successor to Mellon Bank, N.A.), as trustee, as supplemented by a First Supplemental Indenture dated as of February 1, 1979, a Second Supplemental Indenture dated as of May 15, 1995, a Third Supplemental Indenture dated as of February 1, 1998, and a Fourth Supplemental Indenture dated as of April 1, 1999, and as to be further supplemented by the Fifth Supplemental Indenture, dated as of October 15, 2007, (b) First Supplement to Pollution Control Financing Agreement, between Allegheny Energy Supply Company, LLC, and the County Commission of Pleasants County, West Virginia dated as of October 15, 2007 supplementing the Pollution Control Financing Agreement among West Penn Power Company, The Potomac Edison Company and the County Commission of Pleasants County, West Virginia dated as of November 1, 1977, and (c) Fifth Supplement to Deed of Trust and Security Agreement, dated as of October 15, 2007, between Allegheny Energy Supply Company, LLC, and The Bank of New York Trust Company, N.A. supplementing (i) the Deed of Trust and Security Agreement, dated as of November 1, 1977, between West Penn Power Company and The Bank of New York Trust Company, N.A. (as successor to Chase Manhattan Trust Company, National Association as successor to Mellon Bank, N.A.), as supplemented by a First Supplement thereto dated as of August 1, 1978, a Second Supplement thereto dated as of

April 1, 1999, a Third Supplement thereto dated as of November 17, 1999, and a Fourth Supplement thereto dated as of November 18, 1999 and (ii) Deed of Trust and Security Agreement, dated as of November 1, 1977, between The Potomac Edison Company and The Bank of New York Trust Company, N.A. (as successor to Chase Manhattan Trust Company, National Association as successor to Mellon Bank, N.A.), as supplemented by a First Supplement thereto dated as of August 1, 1978, a Second Supplement thereto dated as of April 1, 1999, a Third Supplement thereto dated as of November 17, 1999, and a Fourth Supplement thereto dated as of November 18, 1999.

***“Pollution Control Bond Obligations”*** means all obligations of Seller and Seller’s Subsidiaries under or with respect to the Pollution Control Bond Documents.

***“Pollution Control Bonds”*** means those certain \$142,000,000 the County Commission of Pleasants County, West Virginia, Pollution Control Revenue Refunding Bonds (Allegheny Energy Supply Company, LLC Pleasants Station Project) 2007 Series F (Non-AMT).

***“Post-Closing Tax Period”*** is defined in Section 8.02(b).

***“Potential Contributor”*** is defined in Section 10.05.

***“Pre-Closing Tax Period”*** is defined in Section 8.01.

***“Proceeding”*** is defined in Section 10.03(b).

***“Prime Rate”*** is defined in Section 2.07(c).

***“Purchase Price”*** is defined in Section 2.06(a).

***“Purchased Assets”*** is defined in Section 2.01.

***“Reactive Service”*** means the provision of reactive supply and voltage control from generation or other sources service pursuant to the currently-effective terms of Schedule 2 to the PJM Tariff.

***“Real Property”*** means all of the parcels of real property set forth on Schedule 2.01(a), and all right, title and interest of Seller to appurtenances thereto, including (i) all right, title and interest of Seller in and to easements or rights-of-way appurtenant to such real property; (ii) all right, title and interest of Seller in and to oil, gas or mineral rights, water rights and any other surface and subsurface elements present on such real property; and (iii) all right, title and interest of Seller in and to all rights of ingress and egress to and from such real property, together with all right, title and interest of Seller to all improvements thereon (other than the Facilities). For the avoidance of doubt, any reference to items “on the Real Property” shall include all items at, on, in, upon, over, across, under and within the Real Property.

***“Records”*** means the title and real property documents, drawings, diagrams, data, operating records, manuals, all existing and historic Permits and their applications, files, papers and similar documents of Seller relating specifically to the operations of the Purchased Assets, including all data and electronic information relating primarily to the Purchased Assets or the Business stored or archived in any server, computer, laptop, network, system, or other electronic

database (including any such data or information stored in any Excluded Asset); provided, however, “Records” excludes (i) the accounting and financial books, related financial records and organizational documents of Seller and its Subsidiaries, (ii) any Attorney Work Product, (iii) such records, files and papers of Seller to the extent they do not relate primarily to the Purchased Assets, the Business or the Assumed Liabilities, (iv) Tax Returns (other than as provided in clause (D) below), (v) material that Seller is prohibited from sharing pursuant to confidentiality agreements, (vi) information relating to Seller’s generating fleet that was not created in connection with the Generating Facility and does not relate specifically to the operation of the Purchased Assets, and (vii) other books and records that Seller is prohibited from disclosing under applicable Law and that it is required by applicable Law to retain. Without limiting the foregoing, “Records” shall include (A) the historical operating and safety and maintenance records, manuals, engineering and design plans, blueprints and “as-built” plans, specifications and drawings related to the Generating Facility; (B) all documents, reports and data compilations required to be maintained, created or submitted under any Environmental Law or Environmental Permit, Reliability Standards or other Law relating to the Purchased Assets; (C) all records, filings and applications made with any Governmental Body relating primarily to the ownership or operation of the Generating Facility; and (D) copies of Tax Returns relating primarily to the Business or the Purchased Assets and all books and records with respect to Taxes pertaining primarily to the Business or the Purchased Assets.

“**RECs**” means any alternative and renewable energy resource credits issued by any federal, state or local Governmental Body.

“**Release**” means any releasing, spilling, emitting, leaking, pumping, pouring, emptying, injecting, escaping, dumping, disposing, discharging, depositing, leaching or migrating into or through the environment (including ambient air, soil, surface water, groundwater, land surface or subsurface strata).

“**Reliability Standards**” means those reliability standards, and any regional variations thereof, approved by FERC, as they may be amended from time to time, pursuant to Section 215 of the Federal Power Act.

“**Required Consents**” is defined in Section 3.06.

“**Restoration Cost**” is defined in Section 5.04(a).

“**Seller**” is defined in the preamble.

“**Seller Disclosure Schedule**” means the schedules setting forth certain disclosures of Seller, or qualifications or exceptions to any of Seller’s representations or warranties set forth in ARTICLE 3, which schedules are delivered simultaneously with the execution and delivery of this Agreement and may be supplemented in accordance with Section 7.04 hereof.

“**Seller Environmental Liabilities**” means any liabilities under Environmental Laws to the extent that such liabilities are based on facts or circumstances occurring prior to the Closing Date; provided that “**Seller Environmental Liabilities**” excludes liabilities arising on or after the Closing Date from necessary compliance measures with Effluent Limit Guideline regulations under the Clean Water Act and the closure of McElroy’s Run impoundment.

***“Seller Fundamental Representations”*** is defined in Section 10.01.

***“Seller Material Adverse Effect”*** means any fact, circumstance, event, change, effect or occurrence that, individually or in the aggregate with all other facts, circumstances, events, changes, effects or occurrences, has or would be reasonably likely to have a material adverse effect on the assets, properties or business of the Business, taken as a whole, or that would be reasonably likely to prevent or materially delay or materially impair the ability of Seller to consummate the Transactions, provided, however, that no facts, circumstances, events, changes, effects or occurrences (by themselves or when aggregated with any other facts, circumstances, events, changes, effects or occurrences) resulting from, relating to or arising out of the following shall be deemed to be or constitute a Seller Material Adverse Effect or shall be taken into account when determining whether there has, may or would have occurred a Seller Material Adverse Effect: (i) the effect of any change generally affecting the industries in which the Business operates or the economy or the financial or securities markets in the United States or elsewhere in the world, including any regulatory and political conditions or developments, or any outbreak or escalation of hostilities, weather, climate change, declared or undeclared acts of war or terrorism, (ii) effects of public perceptions of power generation facilities or (iii) the effect of (a) the announcement of, or compliance with, this Agreement or the announcement of the Transactions or (b) any changes in applicable Law or GAAP or interpretation thereof, except to the extent that any fact, circumstance, event, change, effect or occurrence disproportionately impacts the assets, properties or business of the Business relative to other industry participants.

***“Seller Response Deadline”*** is defined in Section 5.07(b).

***“Subsidiary”*** means, with respect to any Person (for purposes of this definition, the “parent”), any other Person (other than a natural person), whether incorporated or unincorporated, of which at least a majority of the securities or ownership interests having by their terms ordinary voting power to elect a majority of the board of directors or other Persons performing similar functions is directly or indirectly owned or controlled by the parent or by one or more of its respective Subsidiaries or by the parent and any one or more of its respective Subsidiaries.

***“Tangible Personal Property”*** means (i) the machinery, mobile or otherwise, equipment (including communication equipment, controls and data storage equipment), vehicles, cranes, forklifts, tools, fixtures, Inventory, furniture and furnishings, and other tangible personal property located on the Real Property, including as set forth on Schedule 2.01(c)(i), and (ii) other tangible personal property used (or if not yet in use, intended to be used) primarily with respect to the Business or the Purchased Assets set forth on Schedule 2.01(c)(ii). “Tangible Personal Property” shall also include, to the extent transferable, all rights of Seller to warranties and licenses received from manufacturers and sellers of such Tangible Personal Property.

***“Tax”*** has the meaning ascribed to such term in Section 8.01.

***“Tax Return”*** means any return, declaration, report, claim for refund, information return or statement relating to Taxes, including any amended return, extension request with respect thereto and any schedule or attachment thereto.

***“Taxing Authority”*** is defined in Section 8.01.

***“Third Party Claim”*** is defined in Section 10.03(b).

***“Title Company”*** is defined in Section 5.07(a).

***“Transaction Agreements”*** means each of this Agreement, the Assignment and Assumption Agreement, the Deed, the Bill of Sale and any other agreement entered into in connection with the transaction described in this Agreement.

***“Transactions”*** means, collectively, the transactions contemplated by the Transaction Agreements.

***“Transfer Taxes”*** is defined in Section 8.02(c).

***“Transmission and Interconnection Facilities”*** means the electric transmission and distribution, substation and communication facilities located on the Real Property and related Tangible Personal Property used primarily in connection with the operation of the Generating Facility, together with all related interconnection rights, rights-of-way and corridor easements related to such facilities, each as described on Schedule 2.01(e).

***“USEPA”*** means the United States Environmental Protection Agency or successor thereto, and any office, committee, department, body, unit or division thereof.

***“WARN Act”*** means the Worker Adjustment and Retraining Notification Act, as amended or modified from time to time, and any similar state or local Law addressing plant closings or mass layoffs.

## Section 1.02      **Rules of Construction**□

(a) The Parties have participated jointly in the negotiation and drafting of this Agreement. If an ambiguity or question of intent or interpretation arises, this Agreement will be construed as if drafted jointly by the Parties and no presumption or burden of proof will arise favoring or disfavoring any Party because of the authorship of any provision of this Agreement.

(b) Unless the context of this Agreement otherwise clearly requires, (i) references to the plural include the singular, (ii) references to the singular include the plural, (iii) references to any gender include the other genders, (iv) the term “including” is not limiting and has the inclusive meaning represented by the phrase “including without limitation,” (v) the term “include” is not limiting and has the inclusive meaning represented by the phrase “include without limitation,” (vi) the term “includes” is not limiting and has the inclusive meaning represented by the phrase “includes without limitation,” (vii) the terms “hereof,” “herein,” “hereunder,” “hereto” and similar terms in this Agreement refer to this Agreement as a whole and not to any particular provision of this Agreement, and (viii) the terms “day” and “days” mean and refer to calendar day(s).

(c) Unless otherwise set forth herein, references in this Agreement to (i) any document, instrument or agreement (including this Agreement) (A) includes and incorporates all exhibits, schedules, disclosure schedules and other attachments thereto, (B) includes all documents, instruments or agreements issued or executed in replacement thereof and (C) means such document, instrument or agreement, or replacement or predecessor thereto, as amended,

modified or supplemented from time to time in accordance with its terms and in effect at any given time, and (ii) a particular Law, regulation or ordinance means such Law, regulation or ordinance as amended, modified, supplemented or succeeded, from time to time and in effect at any given time and all rules and regulations promulgated thereunder, unless the context requires otherwise. All Article, Section, Exhibit and Schedule references herein are to Articles, Sections, Exhibits and Schedules of this Agreement, unless otherwise specified.

(d) The Parties intend that each representation, warranty, covenant, and condition contained herein will have independent significance. If any Party has breached any representation, warranty, or covenant contained herein in any respect, the fact that there exists another representation, warranty or covenant relating to the same or similar subject matter (regardless of the relative levels of specificity) which the Party has not breached will not detract from or mitigate the fact that the Party is in breach of the first representation, warranty, or covenant. If any condition to Closing contained herein has not been satisfied in any respect, the fact that there exists another condition relating to the same or similar subject matter (regardless of the relative levels of specificity) which has been satisfied shall not detract from or mitigate the fact that the first condition has not been satisfied.

## ARTICLE 2

### PURCHASE AND SALE

Section 2.01 **Purchase and Sale** Except as otherwise provided in, and subject to, Section 2.02, upon the terms and subject to the conditions of this Agreement, Buyer agrees to purchase, acquire and accept from Seller and Seller agrees to sell, convey, transfer, assign and deliver, to Buyer at the Closing, free and clear of all Liens, other than Permitted Liens, all of Seller's and its Subsidiaries' right, title and interest in, to and under the following assets as the same shall exist on the Closing Date and under the property, rights, business, claims and assets, real, personal or mixed, tangible and intangible, of every kind and description, wherever located, that primarily relate to the Facilities or are primarily used with respect to the Facilities in the ordinary course of Business (the "**Purchased Assets**"):

- (a) the Real Property;
- (b) the Facilities;
- (c) the Tangible Personal Property;
- (d) all Contracts that are set forth on Schedule 2.01(d) (the "**Assumed Contracts**");
- (e) the Transmission and Interconnection Facilities;

(f) all rights of Seller or its Subsidiaries in and to any causes of action against a third party to the extent (but only to the extent) relating to any Purchased Asset or Assumed Liability, whether received as a payment or credit against future liabilities, including insurance proceeds, condemnation awards and cash payments under warranties to the extent such payments relate to Purchased Assets or Assumed Liabilities;

- (g) the Intellectual Property set forth on Schedule 2.01(g);

(h) all original or, to the extent originals are not readily available, copies of all, Records; provided that (i) if any particular document or other item included in the Records contains information that is not primarily related to the Purchased Assets or the Business, Seller may redact any such information, and (ii) if any particular document or item not transferred to Buyer hereunder contains information related to the Purchased Assets or the Business not otherwise included in the Records, Seller shall provide a copy of such document or item to Buyer (which copy may be redacted to remove any information therein not related to the Purchased Assets or the Business);

(i) all other assets and rights (excluding any Excluded Assets) of every kind and nature, real or personal, tangible or intangible, used or held by Seller for use primarily in connection with its ownership, lease, use or operation of the Generating Facility or primarily in connection with the operation of the Business, in either case located on the Real Property;

(j) all Emission Allowances allocated by a Governmental Body to the benefit of the Purchased Assets and all RECs for the calendar year in which the Closing occurs and any following year;

(k) (i) all inventories of chemicals and gases, coal, oils, supplies, materials, spares (including diesel fuel) located at the Real Property on the Closing Date that are listed on Schedule 2.01(k) (the "*Inventory*") and (ii) any rights of Seller, to the extent transferable, to the warranties received from suppliers with respect to such Inventory;

(l) all insurance benefits, including rights and proceeds, arising from or relating to the Purchased Assets or the Assumed Liabilities with respect to events occurring before the Closing Date, unless the insured loss has been repaired or replaced by Seller in accordance with this Agreement;

(m) all claims of Seller against third parties relating exclusively to the Purchased Assets or the Business, whether choate or inchoate, known or unknown, contingent or non-contingent; and

(n) all Permits relating primarily to the Purchased Assets or the Business, to the extent legally transferable.

It is understood that there are no other assets, rights, business, claims or properties to be transferred pursuant to this Agreement. The transfer of the Purchased Assets pursuant to this Agreement shall not include the assumption of any liability related to the Purchased Assets unless Buyer expressly assumes such liability pursuant to Section 2.03 below.

**Section 2.02 Excluded Assets.** The Purchased Assets shall specifically exclude all of the following assets, rights, business, claims or properties owned by Seller (the "*Excluded Assets*");

(a) all cash, cash equivalents, securities, accounts receivable, revenues, proceeds, payments, rights, business, claims, and short-term investments that are earned or accrued prior to the Closing Date;



(b) environmental credits, RECs, Emissions Allowances allocated by a Governmental Body to the benefit of the Purchased Assets for the calendar year immediately prior to the year in which the Closing occurs, and any earlier year, or other similar rights (and all rights to, in or under them) (i) accrued, vested or otherwise earned (in whole or in part) or (ii) sold or otherwise disposed of in the ordinary course of the operation of the Business and not in violation of any provision of this Agreement or the other Transaction Agreements, prior to the Closing Date or with respect to any period ending, in whole or in part (but then only to the extent of such part), prior to the Closing Date; and any rights and obligations relating to the period prior to the Closing Date under the Assumed Contracts;

(c) all Contracts or arrangements that are not Assumed Contracts;

(d) all organizational documents, minute books, stock records and corporate seals of Seller;

(e) all shares of capital stock or other equity of Seller and its Affiliates;

(f) any Employee Plans and all assets attributable to or related to any Employee Plans;

(g) any and all collective bargaining agreement or other labor agreement to which Seller is a party to or subject to; and

(h) any Contract or arrangement of any nature in respect of any intercompany transaction between Seller, on the one hand, and any Affiliate of Seller, on the other hand, regardless of the subject matter of such transaction, including any contribution to capital, loan, the provision of goods or services, tax sharing arrangements, payment arrangements, intercompany advances, charges or balances, or the like (collectively, the “*Intercompany Arrangements*”);

(i) all other assets, rights, business, claims or properties owned by Seller or an Affiliate of Seller not specifically set forth in Section 2.01.

**Section 2.03 Assumed Liabilities** □ Upon the terms and subject to the conditions of this Agreement, at the Closing, Seller agrees to assign to Buyer, and Buyer agrees to assume, pay, perform and discharge on and after the Closing, in accordance with their respective terms, the Assumed Liabilities, in each case solely to the extent exclusively relating to the Facilities or the Business. “*Assumed Liabilities*” means:

(a) any liabilities relating to the period on and after the Closing Date under the Assumed Contracts except to the extent arising from or relating to any events or circumstances which caused or constituted a breach of or default by Seller under such Assumed Contracts before the Closing Date;

(b) any liabilities arising out of any action, suit, investigation or proceeding arising out of the Purchased Assets (excluding any Excluded Assets and Excluded Liabilities) before any court or arbitrator or any Governmental Body arising out of events, facts or circumstances first occurring, in whole or in part, on and after the Closing Date (but if occurring in part, only to the

extent of such part), but in any event excluding any liabilities that are caused by Seller's breach of this Agreement (but if caused only in part, to the extent of such part);

(c) Buyer Environmental Liabilities; and

(d) the Pollution Control Bond Obligations relating to the period on and after the Closing Date (except to the extent arising from or relating to any events or circumstances which caused or constituted a breach of or default by Seller prior to the Closing Date), but in each case only if, as of the Closing Date, the Pollution Control Bond Obligations: (i) remain Indebtedness of Seller and have not been defeased or retired, and (ii) the assignment to and assumption by Buyer of the Pollution Control Bond Obligations have been approved by the applicable trustee for the Pollution Control Bonds.

Other than the Assumed Liabilities, Buyer shall not assume, or be responsible for, in any manner whatsoever, and Seller shall retain and have sole and complete responsibility for, any liabilities of any nature whatsoever of Seller (or its Subsidiaries), including the Excluded Liabilities.

**Section 2.04 Excluded Liabilities** □ Notwithstanding any provision in this Agreement or any other writing to the contrary, except for the Assumed Liabilities, Buyer is not assuming any of the following liabilities or obligations of Seller, which shall be retained by and remain liabilities and obligations of Seller (all such liabilities and obligations not being assumed being herein referred to as the "**Excluded Liabilities**");

(a) costs and expenses incurred by Seller in connection with this Agreement and the Transactions;

(b) this Agreement or any of the Transaction Agreements (including any amendment or supplement thereto);

(c) any liabilities arising out of any action, suit, investigation or proceeding arising out of the Business or the Purchased Assets before any court or arbitrator or any Governmental Body arising out of events, facts or circumstances occurring (but if occurring in part, only to the extent of such part) prior to the Closing Date;

(d) all liabilities arising out of or related to any Excluded Asset, including any Employee Plan, of Seller or any ERISA Affiliate;

(e) all liabilities of Seller (or any predecessor of Seller) arising under workers' compensation laws or claims or occupational health laws or claims related to the Generating Facility, including and with respect to any employee of Seller who worked or was employed at the Generating Facility;

(f) any liabilities arising under any employment agreement, severance, separation, retention, or termination agreement, or other similar arrangement, with any employee, consultant, or contractor (or its representative) of Seller, or under any collective bargaining agreement or arrangement to which Seller is a party;

(g) any liabilities of Seller under any federal, state or local Laws or regulations governing or relating to employment, or any federal, state, or local investigation of Seller,

including: (i) any liabilities under any federal or state civil rights or similar Law, including the Worker Adjustment Retraining and Notification Act, resulting from the termination of employment of employees of the Business; and (ii) any claims, charges, or other cause of action arising under Laws relating to employment discrimination, equal employment opportunities, disability, labor relations, wages and hours, classification of independent contractors, immigration, workers' compensation, background and credit checks, working conditions, occupational safety and health, family and medical leave, or data privacy and data protection;

(h) any liabilities or obligations of Seller to the extent relating to any Excluded Assets and the ownership, operation and conduct of any business in connection therewith, including any liabilities or obligations of Seller to the extent relating to amounts due from Seller under or arising from any of the Intercompany Arrangements;

(i) any Taxes for which Seller is liable under Section 8.02 and Taxes attributable to the ownership, operation or use of any of the Purchased Assets before the Closing Date (except for Taxes for which Buyer is liable pursuant to Section 8.02);

(j) liabilities or obligations (i) arising in the period before the Closing Date under any term, covenant or provision of any of the Assumed Contracts; (ii) which arise out of or relate to any breach of Assumed Contract that occurred before the Closing; or (iii) which are not related primarily to the Facilities or the Business;

(k) except for the obligations described in Section 2.03(d), any liability representing or related to Seller's or its Subsidiaries' Indebtedness;

(l) Seller Environmental Liabilities;

(m) any liability or obligation to indemnify, reimburse or advance amounts to any officer, director, employee or agent of Seller;

(n) the Pollution Control Bond Obligations, but only if the Pollution Control Bond Obligations are not transferred to and assumed by Buyer at the Closing as provided in Section 2.03(d);

(o) any liability or obligation to distribute to any of Seller's or its Affiliates' shareholders or lenders or otherwise apply all or any part of the consideration received hereunder; and

(p) without limitation by the specific enumeration of the foregoing, any and all liabilities of Seller not expressly assumed by Buyer pursuant to the provisions of Section 2.03.

**Section 2.05 Assignment of Contracts and Rights**□ Anything in this Agreement to the contrary notwithstanding, this Agreement shall not constitute an agreement to assign any Purchased Asset listed on Section 3.06 of the Seller Disclosure Schedule or any claim or right or any benefit arising thereunder or resulting therefrom if such assignment, without the consent of a third party thereto, would constitute a breach or other contravention of such Purchased Asset or in any way materially adversely affect the rights of Buyer or Seller thereunder. Seller and Buyer will use commercially reasonable efforts (but without any material expenditures of money) to obtain the consent of the other parties to any such Purchased Asset

listed on Section 3.06 of the Seller Disclosure Schedule or any claim or right or any benefit arising thereunder for the assignment thereof to Buyer as Buyer may request. If such consent is not obtained prior to the Closing, or if an attempted assignment thereof would be ineffective or would adversely affect the rights of Seller thereunder so that Buyer would not in fact receive all such rights, Seller and Buyer will cooperate in a mutually agreeable, contractually permissible and commercially reasonable arrangement under which, after the Closing, Buyer would obtain the benefits and assume the obligations with respect to the relevant Purchased Asset in accordance with this Agreement, including sub-contracting, sub-licensing, or sub-leasing to Buyer, or under which Seller would enforce for the benefit of Buyer, with Buyer assuming Seller's obligations, any and all rights of Seller against a third party thereto. Seller agrees to continue its commercially reasonable efforts to obtain any such consents with respect to any Purchased Asset listed on Section 3.06 of the Seller Disclosure Schedule after the Closing for the benefit of Buyer in accordance with this Section 2.05. Notwithstanding the foregoing, nothing contained in this Section 2.05 shall limit Buyer's ability to bring a claim for breach of the representations contained in ARTICLE 3 or elsewhere under this Agreement.

**Section 2.06      Purchase Price; Allocation of Purchase Price for Federal Taxes**

(a) Purchase Price. Upon the terms and subject to the conditions set forth in this Agreement, in consideration for the sale, assignment, conveyance, transfer and delivery of the Purchased Assets and the assumption of the Assumed Liabilities, Buyer shall pay to Seller (i) cash in an aggregate amount equal to U.S. \$195,000,000 (the "**Initial Purchase Price**") plus (ii) the Closing Adjustment Amount, as finally determined pursuant to Section 2.07, (together, the "**Purchase Price**"). At least three (3) Business Days prior to the Closing Date, Seller shall provide to Buyer its good faith estimate of the Closing Adjustment Amount, which estimate shall be certified in writing by an appropriate officer of Seller (the "**Estimated Adjustment Amount**"). At the Closing, Buyer shall pay to Seller cash in an aggregate amount equal to (x) the Initial Purchase Price, minus (y) the outstanding principal amount of the Pollution Control Bond Obligations as of the Closing Date, to the extent the Pollution Control Bond Obligations are assigned to and assumed by Buyer at the Closing as provided in Section 2.03(d), plus (z) the Estimated Adjustment Amount (the "**Closing Payment**"). The Closing Payment shall be paid to Seller by Buyer at the Closing by wire transfer of immediately available funds to the account designated by Seller to Buyer by providing written notice to Buyer at least two (2) Business Days prior to the Closing Date.

(b) Buyer shall allocate the Purchase Price and the Assumed Liabilities treated as purchase price for Tax purposes, as of the Closing, among the classes of assets (as described in the Treasury regulations promulgated under section 338 of the Code) to which the Purchased Assets and the other Transaction Agreements relate (the "**Allocation**") in accordance with section 1060 of the Code and the regulations promulgated thereunder (or any similar provision of local or state Tax law) and shall submit the proposed Allocation to Seller not later than sixty (60) days after Closing. If, within sixty (60) days after the receipt of the proposed Allocation, Seller notifies Buyer in writing that Seller disagrees with the proposed Allocation, then Seller and Buyer shall attempt in good faith to resolve their disagreement within the sixty (60) days following Seller's notification to Buyer of such disagreement. If Seller does not so notify Buyer within sixty (60) days of receipt of the proposed Allocation, or upon resolution of the dispute by Seller and Buyer, the proposed Allocation shall become the final Allocation. If Seller and Buyer

are unable to resolve their disagreement within the sixty (60) days following any such notification by Seller, the dispute shall be submitted to a nationally recognized independent accounting firm, for resolution within sixty (60) days of such submission, which resolution shall be final, binding and non-appealable. Each Party shall cooperate fully with the other Party to facilitate a prompt determination of the Allocation. For all Tax purposes, the transactions contemplated by this Agreement shall be reported in a manner consistent with the final Allocation and the terms of the Transaction Agreements and no Party, or any of such Parties' Affiliates, shall take any position inconsistent therewith in any Tax Return (including IRS Form 8594), in any Tax refund claim, in any litigation or otherwise, unless required by applicable Law. The fees, costs and expenses of the valuation firm retained to resolve any dispute with respect to the Allocation, if applicable, shall be borne equally by Buyer, on the one hand, and Seller, on the other.

(c) Not later than thirty (30) days prior to the filing of their respective Forms 8594 relating to this transaction, each Party shall deliver to the other Party a copy of its Form 8594.

#### Section 2.07      **Adjustment to Purchase Price**□

(a) Within sixty (60) days after the Closing Date, Buyer shall deliver to Seller, at Buyer's sole cost and expense, a statement setting forth the Closing Adjustment Amount (the "**Closing Statement**"). Contemporaneously, Buyer shall deliver to Seller a schedule setting forth a calculation of the Purchase Price and the amount of any payment to be made, and by whom, pursuant to Section 2.07(c).

(b) In the event that Seller is in disagreement with the Closing Statement, Seller shall, within thirty (30) Business Days after receipt of the Closing Statement, notify Buyer of such disagreements setting forth with specificity the nature and amounts thereof. In the event that Seller is in disagreement with only a portion of the Closing Statement, Seller or Buyer, as the case may be, shall pay all undisputed amounts in the manner set forth in Section 2.07(c); and all other amounts shall be paid at such time as all disagreements are resolved in accordance with this Section 2.07(b). If Seller is in disagreement with the Closing Statement, and Seller notifies Buyer within such ten (10) Business Day period in accordance with this Agreement, then the Parties shall promptly attempt to resolve such disagreements by negotiation. If the Parties are unable to resolve such disagreements within thirty (30) days following such notice of disagreement by Seller, then the Parties shall appoint an Independent Accounting Firm within forty-five (45) days following such notice, which shall review the Closing Statement and determine the Closing Adjustment Amount. In the event that Seller and Buyer cannot promptly agree on the selection of an accounting firm to act as the Independent Accounting Firm, either Party may request the American Arbitration Association to appoint a nationally recognized independent accounting firm, and such appointment shall be final, binding and conclusive on Seller and Buyer. Resolution of any disagreements shall be made by the Independent Accounting Firm in a writing addressed to all Parties within thirty (30) days following referral to it by the Parties of such disagreements in accordance with this Agreement. The findings of such Independent Accounting Firm shall be final, binding and conclusive on the Parties. All costs, fees and expenses of the Independent Accounting Firm in resolving the disagreement shall be split equally between Buyer and Seller.

(c) No later than the fifth (5th) Business Day following the determination of the Closing Adjustment Amount pursuant to Section 2.07(b), either (i) Seller shall pay Buyer the amount, if any, by which the Closing Payment exceeds the Purchase Price, or (ii) Buyer shall pay Seller the amount, if any, by which the Purchase Price exceeds the Closing Payment, in either case, together with simple interest accruing on such payment at the Prime Rate on and after the Closing Date through but not including the date of payment, by wire transfer of immediately available funds to an account designated by the receiving Party. As used herein, "Prime Rate" means, as of any date, the prime rate as published in The Wall Street Journal on such date or, if not published on such date, on the most recent date of publication.

**Section 2.08 Closing** □ The closing (the "**Closing**") of the sale, assignment, conveyance, transfer and delivery of the Purchased Assets by Seller to Buyer, and the purchase, assumption and acquisition by Buyer of the Purchased Assets and the Assumed Liabilities, and the consummation of the other Transactions contemplated hereby, shall take place at the offices of Squire Patton Boggs (US) LLP, 4900 Key Tower, 127 Public Square, Cleveland, Ohio 44114, no more than three (3) Business Days after date on which the last of the conditions precedent to the Closing set forth in ARTICLE 9 shall have been satisfied or, to the extent permitted by applicable Law, waived by the Party for whose benefit such conditions precedent exist (other than those conditions that by their nature will be satisfied at the Closing, but subject to the satisfaction (or waiver as provided herein) of such conditions), or at such other time or place as Buyer and Seller may agree. The Closing shall be effective for all purposes at 12:01 a.m., New York City time, on the Closing Date.

**Section 2.09 Prorations** □

(a) Except as otherwise provided in this Agreement, all of the items customarily prorated relating to the ownership, lease, maintenance or operation of the Purchased Assets, including those listed below, shall be prorated as of the Closing Date, with Seller liable to the extent such items relate to any period prior to the Closing Date, and Buyer liable to the extent such items relate to any period on and after the Closing Date (measured in the same units used to compute the item in question, and otherwise measured by calendar days):

(i) Unless otherwise provided in Section 8.02(b), personal property, real estate and occupancy Tax assessments and other charges, if any, on or with respect to the ownership, lease, maintenance or operation of the Purchased Assets;

(ii) Rent and all other items (including prepaid services and goods not included in Inventory), in each case, payable by or to Seller under any Contract to which Seller is a party, or by or to which Seller or the Purchased Assets is bound or subject;

(iii) Any Permit, registration, compliance assurance fees or other fees with respect to any Permit relating to the Generating Facility;

(iv) Sewer rents and charges for water, telephone, electricity and other utilities;

(v) Insurance premiums paid on or with respect to the ownership, lease, maintenance or operation of the Purchased Assets to the extent payable under any policy

or other arrangement included among any Contract to which Seller is a party, or by or to which Seller or the Purchased Assets is bound or subject; and

(vi) Prepaid operating and maintenance expenses.

(b) Seller or Buyer, as the case may be, shall promptly reimburse the other Party that portion of any amount paid by such other Party to the extent relating to the period for which Seller or Buyer, as the case may be, is liable under Section 2.09(a), in each case, upon presentation of a statement setting forth in reasonable detail the nature and amount of any such payment. In connection with the prorations set forth in Section 2.09(a), if actual figures are not available on the Closing Date, the proration shall be calculated based upon the respective amounts accrued until the Closing Date or paid for the most recent year or other appropriate period for which such amounts paid are available. All prorated amounts shall be recalculated and paid to the appropriate Party within sixty (60) days after the date that the previously unavailable actual figures become available. Seller and Buyer shall furnish each other with such documents and other records as may be reasonably requested in order to confirm all proration calculations made pursuant to this Section 2.09.

**Section 2.10 Deliveries at Closing** In addition to any other documents to be delivered under other provisions of this Agreement, at the Closing:

(a) Seller shall deliver to Buyer:

- (i) the Bill of Sale duly executed by Seller;
- (ii) the Assignment and Assumption Agreement duly executed by Seller (which, for the avoidance of doubt, shall only include the Pollution Control Bond Obligations if the same are to be assumed by Buyer pursuant to Section 2.03(d));
- (iii) the Deed duly executed by Seller;
- (iv) an officer's certificate certifying that the conditions in Section 9.01 and Section 9.02 (a) - (c) have been satisfied;
- (v) duly executed affidavits of Seller's officers, employees or agents as described in Section 5.07;
- (vi) a certificate by the Secretary of Seller, dated as of the Closing Date, as to the good standing of Seller in the State of Delaware;
- (vii) a certificate of the Secretary of Seller, dated as of the Closing Date, in substantially the form attached hereto as Exhibit D, as to the resolutions of Seller's Board of Directors authorizing the execution and performance of the each of the Transaction Agreements and the transactions contemplated thereby;
- (viii) a certificate of the Secretary of Seller, dated as of the Closing Date, in substantially the form attached hereto as Exhibit E, identifying the name and title and bearing the signatures of each of Seller's officers authorized to execute and deliver the

Transaction Agreements and any documents or affidavits contemplated to be delivered to Buyer pursuant to the Transaction Agreements;

(ix) a duly executed FIRPTA Certificate;

(x) in the event the Pollution Control Bond Obligations are not to be assumed by Buyer pursuant to Section 2.03(d), evidence reasonably acceptable to Buyer demonstrating that all Liens on the Purchased Assets arising from the Pollution Control Bond Obligations are terminated and released as of the Closing Date; and

(xi) any other documents or instruments reasonably required by Buyer to consummate the Transactions contemplated by this Agreement and reasonably requested of Seller prior to the Closing Date.

(b) Buyer shall deliver to Seller:

(i) the Purchase Price (as adjusted pursuant to Section 2.07) in cash by wire transfer to an account of Seller designated by Seller, by notice to Buyer, such notice to be delivered not later than two (2) Business Days prior to the Closing Date (or if not so designated, then by certified or official bank check payable in immediately available funds to the order of Seller in such amount);

(ii) the Assignment and Assumption Agreement duly executed by Buyer (which, for the avoidance of doubt, shall only include the Pollution Control Bond Obligations if the same are to be assumed by Buyer pursuant to Section 2.03(d));

(iii) an officer's certificate certifying that the conditions in Section 9.01 and Section 9.03 (a) - (c) have been satisfied;

(iv) a certificate of the Secretary of Buyer, dated as of the Closing Date, in substantially the form attached hereto as Exhibit F, as to the resolutions of Buyer's Board of Directors authorizing the execution and performance of each of the Transaction Agreements to which it is a party and the transactions contemplated thereby;

(v) a certificate of the Secretary of Buyer, dated as of the Closing Date, in substantially the form attached hereto as Exhibit G, identifying the name and title and bearing the signatures of each of Buyer's officers authorized to execute and deliver Transactions Agreements to which it is a party; and

(vi) any other documents or instruments reasonably required by Seller to consummate the transactions contemplated by this Agreement and reasonably requested of Buyer prior to the Closing Date.

### ARTICLE 3

#### REPRESENTATIONS AND WARRANTIES OF SELLER

Except as set forth in the Seller Disclosure Schedule or with respect to representations or warranties that speak of a specific date, Seller represents and warrants to Buyer that the



statements contained in this ARTICLE 3 are true, correct and complete as of the Execution Date and will be true, correct and complete as of the Closing Date.

**Section 3.01 Corporate Existence and Power**□ Seller is a Delaware limited liability company duly organized, validly existing, and in good standing under the Laws of the State of Delaware. Seller has full limited liability company power and authority to conduct the Business as it is now being conducted, to own or use the Purchased Assets, and to perform all its obligations under the Assumed Contracts. With respect to the Facilities or the Business, Seller is duly qualified to do business as a foreign corporation and is in good standing under the laws of each state or other jurisdiction in which either the ownership or use of the properties owned or used by it, or the nature of the activities conducted by it, requires such qualification, except where failure to be so qualified would not reasonably be expected to have a Seller Material Adverse Effect.

**Section 3.02 Corporate Authorization**□ Seller has the relevant corporate power and authority necessary to execute and deliver each Transaction Agreement to which it is a party and to perform and consummate the Transactions. Seller has taken all action necessary to authorize the execution and delivery of each Transaction Agreement to which it is a party, the performance of its respective obligations thereunder, and the consummation of the Transactions. Each Transaction Agreement to which Seller is a party has been duly authorized by, and has been or will be duly executed and delivered by, and, assuming the due authorization, execution and delivery thereof by each counterparty, is Enforceable against, Seller.

**Section 3.03 Governmental Authorization**□ The execution, delivery and performance by Seller of the Transaction Agreements to which it is a party and the consummation of the Transactions require no action by or in respect of, or registration, filing, application, notice, consent, approval, qualification, or waiver with, by or to any Governmental Body or under any Law or Order, other than any such (i) action or filing as set forth on Section 3.03 of the Seller Disclosure Schedule or (ii) action, registration, filing, application, notice, consent, approval, qualification or waiver that would not, individually or in the aggregate, reasonably be expected to be material to the Purchased Assets or the Business.

**Section 3.04 Noncontravention**□ Except as set forth in Section 3.04 of the Seller Disclosure Schedule, the execution, delivery and performance by Seller of the Transaction Agreements to which it is a party and the consummation of the Transactions do not and will not (a) result in a violation of any organizational document of Seller, (b) violate any applicable Law in any manner, (c) assuming that all Required Consents are obtained, constitute a default under or give rise to any right of termination, cancellation or acceleration of any right or obligation or to a loss of any benefit relating to the Business to which Seller or any of its Subsidiaries is entitled under any provision of any Contract binding upon Seller or such Subsidiary, (d) result in any Lien on the Purchased Assets (other than Permitted Liens), or (e) result in or cause the violation, suspension or revocation of any Permit relating to the Business, except, in the case of each of clauses (b) and (c), where such violation, default, termination, cancellation, or acceleration (as applicable) would not, individually or in the aggregate, reasonably be expected to be material to the Purchased Assets or the Business.

**Section 3.05 Finders' Fees**□ There is no investment banker, broker, finder or other intermediary which has been retained by or is authorized to act on behalf of Seller

or any of its Affiliates who might be entitled to any fee or commission from Buyer or its Affiliates in connection with the Transactions.

**Section 3.06 Required Consents** ☐ Section 3.06 of the Seller Disclosure Schedule sets forth each Assumed Contract or other Purchased Asset requiring a consent or other action by any Person as a result of the execution, delivery and performance of the Transactions (the “*Required Consents*”).

**Section 3.07 Financial Statements** ☐

(a) Seller has delivered to Buyer Seller’s historical financial information for years ended 2014 and 2015 (“*Historical Financials*”) which have been certified by an authorized officer of Seller. The Historical Financials fairly present, in all material respects, the financial position, results of operations, revenue and cash flows of Seller including with respect to the Purchased Assets and the Business for the periods indicated and ended on such dates, subject to normal year-end adjustments.

(b) There are no liabilities against, relating to or affecting the Purchased Assets or the Business (whether accrued, absolute, contingent or otherwise) that would be required by GAAP to be included in a consolidated balance sheet of Seller with respect to the Purchased Assets or the Business (including the notes thereto), other than (i) liabilities set forth in Section 3.07(b) of the Seller Disclosure Schedule or in the Historical Financials, and (ii) liabilities that have been incurred since December 31, 2015 in the ordinary course of business, which liabilities, individually or in the aggregate, are not material to the Business (taken as a whole).

**Section 3.08 Absence of Certain Changes** ☐ Except as set forth in Section 3.08 of the Seller Disclosure Schedule, since December 31, 2015, the Business has been conducted in the ordinary course consistent with past practices and, without limiting the foregoing, there has not been:

- (a) a Seller Material Adverse Effect that has occurred and is continuing;
- (b) any transaction or commitment made, or any Contract entered into, or any action taken, by Seller or any of its Subsidiaries relating to the Business or any Purchased Asset, in either case that, if made, entered into or taken after the date of this Agreement, would require the consent of Buyer pursuant to Section 5.01(b).

**Section 3.09 Contracts** ☐

(a) Section 3.09(a) of the Seller Disclosure Schedule contains an accurate and complete list of and Seller has delivered or made available to Buyer accurate, correct and complete copies of each of the following Contracts (including all amendments, supplements and modifications), which relate primarily to the Purchased Assets, the Assumed Liabilities or the Business:

- (i) each Contract that involves performance of services or delivery of goods or materials by or to Seller of an annual amount or value in excess of \$100,000;

(ii) each Contract that was not entered into in the ordinary course of business and that involves expenditures or receipts of Seller in excess of \$100,000;

(iii) each Contract affecting the ownership of, leasing of, title to, use of, or any leasehold or other interest in, any personal property (except personal property leases and installment and conditional sales agreements having a value per item or aggregate payments of less than \$100,000 and with a term of less than one year);

(iv) each Contract with any labor union or other employee representative of a group of employees relating to wages, hours, and other conditions of employment;

(v) each Contract entered into that contains or provides for an express undertaking by Seller to be responsible for consequential damages;

(vi) each interconnection and transmission Contract, and each Contract for the purchase of station power or station service;

(vii) each operation and maintenance Contract of an annual amount or value in excess of \$100,000;

(viii) partnership, joint venture, or limited liability company agreements;

(ix) each Contract that limits the rights of Seller to compete with any Person, in any line of business, in any business activity, or in any geographical area with respect to the operation of the Purchased Assets (which, for the avoidance of doubt, shall not include any such restrictions that arise solely pursuant to applicable Law);

(x) each Contract (A) under which any Person has incurred, created, assumed or guaranteed any outstanding Indebtedness or (B) for any outstanding agreement of guaranty or surety, whether direct or indirect;

(xi) each Contract and any other arrangement, with respect to which Seller or its Subsidiaries provides monetary credit support or guarantees as of the date hereof, with the amount of such monetary credit support or guarantees set forth in Section 3.09(a) of the Seller Disclosure Schedule next to each such Contract and arrangement listed therein;

(xii) any operating agreement pursuant to which services and employees exclusively for the operation and maintenance of the Generating Facility are provided to Seller;

(xiii) any Tax abatement, incentive or similar special Tax benefit agreements; and

(xiv) each amendment, supplement, and modification (whether oral or written) in respect of any of the foregoing.

(b) Except as disclosed in Section 3.09(b) of the Seller Disclosure Schedule:

(i) no Contract other than the Assumed Contracts set forth on Schedule 2.01(d) or the Contracts set forth on Section 3.19 of the Seller Disclosure Schedule is used by Seller in the conduct of the Business or otherwise relates to the Purchased Assets;

(ii) there are no Contracts to which Seller is a party and is obligated or has an option to sell, lease or dispose of any Purchased Asset other than the sale of products in the ordinary course of business consistent with past practice;

(iii) each Assumed Contract is in full force and effect and is Enforceable against Seller or its Subsidiary and, to the Knowledge of Seller, the counterparty thereto, and subject to the receipt of any Required Consent, each Assumed Contract will continue to be so Enforceable on substantially similar terms following the consummation of the Transactions;

(iv) each Assumed Contract will continue to be Enforceable on substantially similar terms following the consummation of the Transactions;

(v) Seller has performed all Material obligations required to be performed by it under each Assumed Contract and, to the Knowledge of Seller, there exists no fact or circumstance that constitutes a Material breach, violation or default by Seller under, or that would (with notice, lapse of time or both) result in or constitute a Material breach, violation or default by Seller under an Assumed Contract or that would entitle any other party thereto to terminate or exercise any other remedies, including the exercise of any purchase right granted by any Encumbrance, under such Assumed Contract;

(vi) to the Knowledge of Seller, each party (other than Seller) to each Assumed Contract has performed all Material obligations required to be performed by it thereunder and there exists no fact or circumstance that constitutes a Material breach, violation or default by each party thereto (other than Seller) under, or that would (with notice, lapse of time or both) result in or constitute a Material breach, violation or default by each party thereto (other than Seller) under an Assumed Contract or would entitle Seller or any other party thereto to terminate or exercise any other remedies, including the exercise of any purchase right granted by any Lien, under such Assumed Contract;

(vii) Except as described on Section 3.09(b) of the Seller Disclosure Schedule, Seller is not currently renegotiating any Assumed Contract and has not received any notice of any non-renewal or price increase with respect thereto;

(viii) Seller has not received from, or delivered to, any party or other Person written notice of any breach, violation or alleged default under an Assumed Contract that has not been rescinded or cured; and

(ix) neither Seller nor, to the Knowledge of Seller, any other party thereto has waived any of its Material rights under an Assumed Contract, either orally or in writing.

(c) To the Knowledge of Seller, except as described on Section 3.09(c) of the Seller Disclosure Schedule, there are no renegotiations of, attempts to renegotiate, or outstanding rights to renegotiate any material amounts paid or payable to Seller or its Subsidiaries under current or

completed Assumed Contracts with any Person having the contractual or statutory right to demand or require such renegotiation and to the Knowledge of Seller no such Person has made written demand for such renegotiation.

#### **Section 3.10      Litigation**

(a) Except as set forth in Section 3.10 of the Seller Disclosure Schedule, there is no action, suit, investigation or proceeding pending against, or to the Knowledge of Seller, threatened against, Seller or any of its Subsidiaries with respect to (i) the Business or relating to or affecting any of the Purchased Assets, before any arbitrator or Governmental Body or (ii) that challenges, or that may have the effect of preventing, delaying, making illegal, or otherwise interfering with, any of the Transactions. Seller has delivered to Buyer copies of all pleadings, correspondence, and other documents relating to each proceeding listed in Section 3.10(a) of the Seller Disclosure Schedule. Notwithstanding the foregoing, no representation or warranty is made in this Section 3.10 with respect to environmental matters, which are covered exclusively in Section 3.14.

(b) Except as set forth in Section 3.10(b) of the Seller Disclosure Schedule, (i) there is no Order to which Seller, any aspect of the Business or any of the Purchased Assets is subject; and (ii) no officer or director of Seller is subject to any Order that prohibits such officer or director from engaging in or continuing any conduct, activity, or practice relating to the Business.

(c) Except as set forth in Section 3.10(c) of the Seller Disclosure Schedule, (i) Seller is, and at all times since January 1, 2016 has been, in compliance with all of the terms and requirements of each Order to which it, in connection with the Business or the Facilities, or any of the Purchased Assets is or has been subject, (ii) no event has occurred or circumstance exists that is reasonably likely to constitute or result in (with or without notice or lapse of time) a violation of or failure to comply with any term or requirement of any Order to which Seller or any of the Purchased Assets is subject, and (iii) Seller has not received, at any time since January 1, 2016, any written or, to the Knowledge of Seller, oral, notice or other communication from any Governmental Body or any other Person regarding any actual, alleged, possible, or potential violation of, or failure to comply with, any term or requirement of any Order to which Seller or any of the Purchased Assets is or has been subject.

**Section 3.11      Compliance with Laws** Since January 1, 2014, Seller has complied and is in compliance in all Material respects with all applicable Laws that affect the Business or the Purchased Assets. With respect to the Business or the Facilities, no event has occurred or circumstance exists that (with or without notice or lapse of time) (a) would reasonably be expected to constitute or result in a violation by Seller of, or a failure on the part of Seller to comply with, any Law, or (b) would reasonably be expected to give rise to any obligation on the part of Seller to undertake, or to bear all or any portion of the cost of, any remedial action of any nature. Seller has not received, at any time since January 1, 2014, any notice or other communication (whether oral or written) from any Governmental Body or any other Person regarding (a) any actual, alleged, possible, or potential violation of, or failure to comply with, any Law, or (b) any actual, alleged, possible, or potential obligation on the part of Seller to undertake, or to bear all or any portion of the cost of, any remedial action of any nature. Notwithstanding the foregoing, no representation or warranty is made in this Section 3.11 with respect to environmental matters, which are covered exclusively in Section 3.14.

**Section 3.12 Title to Purchased Assets** Seller has good, marketable and valid title to all of the Purchased Assets, in each case free and clear of all Liens arising by, through or under Seller, other than Permitted Liens.

**Section 3.13 Employees**

(a) Except as set forth on Section 3.13 of the Seller Disclosure Schedule, Seller does not currently, nor has it ever, sponsored, maintained, established, contributed to or been required to sponsor, maintain, establish or continue to any Employee Plan or any arrangement that, if established, would constitute an Employee Plan. Neither Seller nor any ERISA Affiliate has any liability under, or is subject to any Lien or other adverse right relating to, any Employee Plans that would (i) affect in any manner whatsoever Buyer's right, title and interest in, or Buyer's right to use or enjoy (free and clear of any Lien, other than Permitted Liens), any Purchased Assets, any Assumed Liability or any aspect of the Generating Facility or (ii) result in the assumption by or imposition on Buyer of any liability. In respect of the Business Employees, neither Seller nor any ERISA Affiliate has ever maintained, contributed to, been required to contribute to, or otherwise participated in, or had any liability or obligation with respect to, any Employee Plan pursuant to a collective bargaining agreement and, thus, has no withdrawal liability with respect to any such Employee Plan, including any Multiemployer Plan.

(b) Seller is not a party to any labor or collective bargaining Contract (including, without limitation, side agreements, letters agreements, memoranda of understanding, settlement agreements, grievance settlements or any form of binding agreement within the scope of 29 U.S.C. § 185) pertaining to the Business and there are no additional labor or collective bargaining Contracts which pertain to Business Employees.

(c) With respect to the Business Employees, no labor organization or group of Employees has made a pending demand for recognition in the past five years, and there are no representation proceedings or petitions seeking a representation proceeding presently pending or, to the Knowledge of Seller, threatened to be brought or filed, with the National Labor Relations Board or other labor relations tribunal involving the Business Employees. To the Knowledge of Seller there is no organizing activity pending or, to the Knowledge of Seller, threatened by any labor organization or group of Business Employees. To the Knowledge of Seller, there is no neutrality, card check, consent election or recognition agreement with any labor organization with respect to the Business. There is not pending, or to Seller's Knowledge, threatened, any strike, picketing, lockout, work stoppage or work slowdown with respect to the Business.

(d) With respect to the Business, there are no, and have not been in the past five years any: (i) strikes, work stoppages, slowdowns, lockouts or arbitrations, or (ii) grievances or other labor disputes pending or, to the Knowledge of Seller, threatened against or involving Seller. There are no unfair labor practice charges, grievances or complaints pending or, to the Knowledge of Seller, threatened by or on behalf of any Business Employee.

(e) There are no complaints, charges or claims against Seller pending or, to the Knowledge of Seller, threatened with any Governmental Body based on, arising out of, in connection with or otherwise relating to the employment or termination of employment of, or the failure to employ, any individual in connection with the Business.

(f) With respect to the Business Employees, there have been no Material violations of any Laws relating to employment, equal employment opportunity, non-discrimination, affirmative action, civil rights, terms and conditions of employment, wages, hours, benefits, family and medical leave rights, payment of wages, employee privacy rights, immigration, work eligibility, labor relations, occupational safety and health, the WARN Act and any similar state or local "mass layoff" or "plant closing" Laws, employee and independent contractor classifications, workers' compensation and the collection and payment of withholding and/or social security Taxes and any similar Taxes. To the Knowledge of Seller, all Business Employees are legally eligible to work in the jurisdictions where they currently are employed. There has been no "mass layoff" or "plant closing" (as defined by the WARN Act) with respect to the Business in the past five years. Seller is not liable for the payment of any compensation, damages, Taxes, fines, penalties or other amounts, however designated for failure to comply with the foregoing. Seller is not subject to any consent decree or settlement agreement with any Governmental Body pertaining to compliance with Laws pertaining to labor or employment issues with respect to the Business.

**Section 3.14 Environmental Matters** Except as set forth in Section 3.14 of the Seller Disclosure Schedule:

(a) The Purchased Assets are not, and have not been since January 1, 2014, in violation of, or non-compliant with, any Environmental Law in any material respect;

(b) To the Knowledge of Seller, there are no facts, circumstances, conditions or occurrences regarding the Purchased Assets that would reasonably be expected to form the basis of an Environmental Claim arising with respect to the Purchased Assets. There are no unresolved past or pending Environmental Claims and, to the Knowledge of Seller, there are no Environmental Claims threatened, in each case with respect to the ownership or operation of the Purchased Assets, and neither Seller nor any Affiliate of Seller has received any communication alleging potential responsibility for response costs or remediation with respect to a Release or threatened Release of any Hazardous Materials, or requesting information concerning any such responsibility or Release, in each case with respect to the Business.

(c) Neither Seller nor any Affiliate of Seller has used, handled, stored or Released Hazardous Materials at, on, under or from the Purchased Assets, except for any such use, handling, storage or Release that was in compliance with Environmental Law, and, to the Knowledge of Seller none of the Purchased Assets is contaminated by any substance, including any Hazardous Material, in a manner that has given or would give rise to any liability, including damages for response costs, corrective action costs, personal injury, property damage or natural resources damages, pursuant to any Environmental Law.

(d) None of the Purchased Assets contains or includes (i) any underground storage tanks or pumps, (ii) asbestos containing material in any form or condition, (iii) materials or equipment containing polychlorinated biphenyls, or (iv) landfills, surface impoundments, or disposal areas.

(e) Seller has obtained all Environmental Permits required under applicable Environmental Laws, including without limitation, for the ownership and operation of the Purchased Assets on the Closing Date. Each such Environmental Permit is described on Section

3.14 of the Seller Disclosure Schedule, and is either in full force and effect or remains effective as a result of the timely filing of a renewal application, and Seller is in material compliance with all applicable obligations imposed by such Environmental Permits and the consummation of the Transactions will not adversely affect such Environmental Permits. Regarding all Environmental Permits with respect to the Purchased Assets for which approval, renewal, amendment, or modification is currently being sought or is currently pending before a Governmental Body, no material expenditures, capital improvements, or changes in operation will be necessary as a condition or result of such approval, renewal, amendment, or modification.

(f) No Lien has been imposed on any of the Purchased Assets by any Governmental Body in connection with any non-compliance with or liability under or pursuant to any Environmental Laws.

(g) The Transactions will not result in any liabilities for site investigation or cleanup, or require the consent of any Person, pursuant to any Environmental Laws, including any so-called "transaction-triggered" or "responsible property transfer" requirements.

(h) Seller has filed and/or maintained all material notices, records, reports, financial responsibility, environmental management or response plans, and applications regarding the Purchased Assets required to be maintained under Environmental Laws. Seller has provided Buyer with copies of all material environmental audits, environmental risk assessments, site assessments and environmental agency reports in Seller's possession, custody or control relating to the compliance of the Purchased Assets with Environmental Laws or to the Release or threat of Release of Hazardous Materials in connection with the ownership or operation of the Purchased Assets.

(i) Notwithstanding anything to the contrary, Seller is not making any representations or warranties in this Agreement or otherwise arising under Environmental Laws except as specifically set forth in this Section 3.14.

#### **Section 3.15 Permits.**

(a) Seller possesses, and is in compliance in all material respects with, all Permits (other than Environmental Permits which are covered exclusively in Section 3.14), required to be obtained for operation of the Business as currently conducted and has timely and adequately filed any necessary renewal applications for such Permits. Section 3.15(a) of the Seller Disclosure Schedule sets forth a list of all such Permits. Except as set forth in Section 3.15(a) of the Seller Disclosure Schedule, with respect to each such Permit:

(i) it is valid, subsisting and in full force and effect;

(ii) Seller is, and at all times for the past three (3) years, has been, in full compliance with all of the terms and requirements of such Permit;

(iii) there is no action, suit, investigation or proceeding pending, or to the Knowledge of Seller, threatened which would reasonably be expected to directly and adversely affect the validity of any effective or proposed Permit and, to the Knowledge of Seller, there exists no basis for revocation or suspension of any such Permit;



(iv) Seller has not received at any time since January 1, 2014, any written or, to the Knowledge of Seller, oral notice or other communication from any Governmental Body or any other Person regarding (A) any actual, alleged, possible, or potential violation of or failure to comply with any term or requirement of such Permit, or (B) any actual, proposed, possible, or potential revocation, withdrawal, suspension, cancellation, termination of, or modification to such Permit;

(v) all applications required to have been filed for the renewal of such Permit has been duly filed on a timely basis with the appropriate Governmental Bodies, and all other filings required to have been made with respect to such Permit have been duly made on a timely basis with the appropriate Governmental Bodies; and

(vi) for any Permit relating to the Generating Facility for which approval, renewal, amendment, or modification is currently being sought or is currently pending before a Governmental Body, no Material expenditures, capital improvements, or changes in operation will be necessary as a condition or result of such approval, renewal, amendment, or modification.

(b) Seller's operations have been conducted in accordance in all Material respects with the representations and conditions made in the applications for its Permits.

(c) Notwithstanding the foregoing, no representation or warranty is made in this Section 3.15 with respect to environmental matters, which are covered exclusively in Section 3.14.

#### **Section 3.16      Taxes.**

(a) Seller has filed or will file when due all Tax Returns that are required to be filed by it with respect to any Tax relating to the Business or the Purchased Assets. All such Tax Returns were correct and complete in all material respects and were prepared in good faith compliance with all applicable Laws and regulations. Seller has paid all Taxes that have become due relating to the Business except any that are being contested in good faith.

(b) No notice of deficiency or assessment or failure to file has been received by Seller or its Affiliates from any taxing authority with respect to liabilities for Taxes that, if not paid or contested in good faith on a timely basis, could result in a Lien on any of the Purchased Assets, and neither Seller nor any of its Affiliates has failed to file any Tax Returns or pay any Taxes as a result of which any of the Purchased Assets could be subject to any Lien for Taxes other than a Lien for property Taxes and other governmental charges and assessments which are not yet due and payable or the validity of any Tax which is being contested in good faith by appropriate proceedings. There are no outstanding agreements or waivers extending the applicable statutory periods of limitation for Taxes associated with the Business or the Purchased Assets that will be binding upon Buyer on and after the Closing Date.

(c) With the exception of the FirstEnergy Corp. and Subsidiary Companies Intercompany Income Tax Allocation Agreement dated as of January 31, 2017, none of the Purchased Assets are bound by any tax sharing agreement or other similar arrangements.

(d) None of the Purchased Assets are property that is required to be treated as being owned by any other Person pursuant to the so-called safe harbor lease provisions of former Section 168(f) of the Code, and none of the Purchased Assets are "tax-exempt use" property within the meaning of Section 168(h) of the Code.

#### **Section 3.17      Personal Property.**

(a) Seller has good and valid title to, or rights by license, lease or other agreement to use, all Tangible Personal Property, free and clear of all Liens, except Permitted Liens.

(b) Section 3.17(b)(i) of the Seller Disclosure Schedule sets forth a complete list of all Tangible Personal Property that has an original cost in excess of \$100,000 individually. Section 3.17(b)(ii) of the Seller Disclosure Schedule sets forth a list of all spare parts and inventory owned and/or used by Seller primarily in the conduct of the Business.

#### **Section 3.18      Owned and Leased Property.**

(a) Real Property. Except as set forth on Section 3.18(a) of the Seller Disclosure Schedule, (i) the owned Real Property is owned of record by Seller and no other Person has any ownership or leasehold interest of any of the owned Real Property; (ii) Seller owns the Real Property free and clear of all Liens, except Permitted Liens; (iii) Seller is not in violation of or default under any easements, restrictions or other Liens on or relating to the Real Property; (iv) none of the owned Real Property is subject to any rights of way, restrictive covenants (including deed restrictions or limitations issued pursuant to any Environmental Law), declarations, agreements, or Laws affecting building use or occupancy, or reservations of an interest in title; (v) Seller has good, insurable and marketable title thereto and has the unrestricted right to sell, convey or otherwise transfer its interest in all such Real Property; (vi) there are no Improvements that have been made or authorized by any Governmental Body, the costs of which are to be assessed as special Taxes or charges against any of the Real Property; (vii) the Real Property is not subject to any unpaid assessment; (viii) there is no pending or, to Seller's Knowledge, contemplated condemnation or eminent domain proceeding affecting all or any portion of any of the Real Property or, to Seller's Knowledge, any plans, proposals or ordinances by any Governmental Body for changes in road grade, access or other municipal improvements which would affect the Real Property or result in any assessment; (ix) no Person has any rights to acquire, lease or use (or does use) any of such Real Property or has any interest in any of such Real Property; (x) the Real Property includes all necessary rights of ingress and egress (legal and practical) over public rights-of-way or valid and existing private easements of perpetual duration which have priority over all existing mortgages or security instruments except where failure to do so would not reasonably be expected to materially and adversely impact the ongoing operations of the Business; (xi) the Real Property is in compliance with all applicable Laws relating to zoning and land use (and the current use does not constitute a nonconforming use), and Seller has received no notice alleging a material violation of such Laws which remains uncured; (xii) there are no pending or, to Seller's Knowledge, threatened actions, suits or proceedings to modify the zoning or land use classification of any Real Property; (xiii) Seller has made available to Buyer copies of each deed for each parcel of such Real Property and the most recent title insurance policy and surveys relating to such Real Property, in each case to the extent

in Seller's possession or control; and (xiv) to Seller's Knowledge, there is no material physical damage to any Real Property for which there is no insurance in effect.

(b) No Leased Properties. Seller does not hold or own any leasehold interest in any parcels of Real Property or Tangible Personal Property that are part of, or used primarily in connection with, the Facilities nor is it a party to any sublease, license or other occupancy agreement with respect to any Real Property used in connection with the Facilities.

#### **Section 3.19 Sufficiency of Purchased Assets.**

Except as set forth on Section 3.19 of the Seller Disclosure Schedule, the Purchased Assets constitute all of the assets, properties and rights (whether real, personal or mixed, tangible or intangible) and interests necessary and sufficient to permit the operation and maintenance of the Generating Facility as a coal-fired generating facility immediately following the Closing, in substantially the manner, presently and historically over the past year since the Execution Date, operated by Seller.

#### **Section 3.20 Intellectual Property.**

To the Knowledge of Seller:

(a) All Intellectual Property owned and used by Seller used in connection with the operation of the Business or the ownership of the Purchased Assets (i) is valid, subsisting, in proper form and enforceable, and has been duly maintained, including the submission of all necessary filings and fees in accordance with the legal and administrative requirements of the appropriate jurisdictions and (ii) has not lapsed, expired or been abandoned, nor are they the subject of any opposition, interference, cancellation proceeding or other legal or governmental action or proceeding before any Governmental Body in any jurisdiction.

(b) No act or omission by Seller in connection with the conduct of the Business violates, infringes or misappropriates, or has violated, infringed or misappropriated, any Intellectual Property of any other Person. Seller has not received any claims in writing or, to the Knowledge of Seller, otherwise that Seller (or any of its respective Affiliates) is violating, infringing or misappropriating the Intellectual Property of any other Person in connection with the conduct of the Business or affecting any of the Purchased Assets, nor has Seller delivered any notices to any Person that such Person is violating, infringing or misappropriating the Intellectual Property owned or used by Seller with respect to the Business or the Purchased Assets. No third party is violating, infringing or misappropriating any Intellectual Property owned or used by Seller in connection with the operation of the Business or the ownership of the Purchased Assets. The consummation by Seller of the transactions contemplated by the Transaction Agreements will not infringe upon any rights of any other Person to or in any Intellectual Property.

#### **Section 3.21 Insurance.**

Section 3.21 of the Seller Disclosure Schedule lists all policies of fire, liability, workers' compensation and other forms of insurance owned or held by, or on behalf of, Seller and insuring any Purchased Assets that are now in full force and effect, and such list states the type of policy, the limits of coverage, the carrier and the expiration date. All premiums with respect to such

policies covering all periods up to and including the date hereof have been paid, and neither Seller nor any Affiliates have received any notice of cancellation, termination, non-renewal, or denial with respect to any such policy which was not replaced on substantially similar terms prior to the date of such cancellation or termination. Since January 1, 2015, Seller has not been refused any such insurance with respect to any Purchased Assets.

**Section 3.22      Operations and Maintenance of the Generating Facility.**

(a) Except as set forth on Section 3.22(a) of the Seller Disclosure Schedule, and except for such defective work, equipment or materials that have not prevented the Generating Facility from being operated in the ordinary course of business consistent with past practices, there are no pending claims for defective work, equipment or materials relating to the Generating Facility made by Seller or any of its Affiliates against any Person. The Generating Facility is in good operating condition, subject to normal wear and tear, and has been regularly maintained in accordance with Good Utility Practice.

(b) The Records accurately reflect the operational history of the Generating Facility in all Material respects.

**Section 3.23      Full Disclosure.**

No representation or warranty by Seller in this Agreement and no statement contained in the Seller Disclosure Schedule to this Agreement or any certificate or other document furnished or to be furnished to Buyer pursuant to this Agreement contains any untrue statement of a material fact, or omits to state a material fact necessary to make the statements contained therein, in light of the circumstances in which they are made, not misleading.

**Section 3.24      Representations Complete.**

Except as to those matters covered by the representations and warranties in this Agreement, (A) SELLER MAKES NO OTHER REPRESENTATIONS OR WARRANTIES WHATSOEVER (INCLUDING ANY IMPLIED OR EXPRESS WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR CONFORMITY TO MODELS OR SAMPLES OF MATERIALS) TO BUYER AND (B) THE PURCHASED ASSETS ARE BEING CONVEYED ON AN "AS-IS, WHERE-IS" AND "WITH ALL FAULTS" BASIS, AND (C) Seller hereby disclaims all liability and responsibility for any representation, warranty, statement, or information not included herein that was made, communicated, or furnished (orally or in writing) to Buyer or its representatives (including any opinion, information, projection, or advice that may have been or may be provided to Buyer by any director, officer, employee, agent, consultant, or representative of Seller). Without limiting the foregoing, no representation or warranty is made with respect to (a) the information included in any materials provided by Seller or its representatives to Buyer or its representatives, or any supplement or amendment thereof or other information provided in connection with the solicitation of proposals to acquire the Business or the negotiations related thereto or to this Agreement, such information being provided for Buyer's convenience only, (b) any projections, estimates or budgets delivered to or made available to Buyer of future revenues, future results of operations (or any component thereof), future cash flows or future financial condition (or any component thereof) of the Business or the future business and operations of the Business or (c)

any other information or documents made available to Buyer, counsel, accountants or other representatives or advisors with respect to the Business, in each case except as expressly set forth in this Agreement. Seller shall have no liability or responsibility for the Purchased Assets, the Business (excluding the Excluded Assets) or the Assumed Liabilities, in each case on and after the Closing Date, except as expressly set forth in this Agreement.

**Section 3.25 Seller's Acknowledgement** Seller acknowledges and agrees that any Claims arising under Seller's or Buyer's representations and warranties shall be subject to the limitations on liabilities and other provisions set out in ARTICLE 10.

## ARTICLE 4

### REPRESENTATIONS AND WARRANTIES OF BUYER

Except as set forth in the Buyer Disclosure Schedule or with respect to representations or warranties that speak of a specific date, Buyer represents and warrants to Seller that the statements contained in this ARTICLE 4 are correct and complete as of the Execution Date and will be correct and complete as of the Closing Date.

**Section 4.01 Corporate Existence and Power** Buyer is a corporation duly organized, validly existing, and in good standing under the Laws of the State of Ohio. Buyer is duly authorized to conduct its business and is in good standing under the Laws of each jurisdiction where such qualification is required, except where failure to be so qualified would not have, individually or in the aggregate, a Buyer Material Adverse Effect.

**Section 4.02 Corporate Authorization** Buyer has the relevant entity power and authority necessary to execute and deliver each Transaction Agreement to which it is a party and to perform and consummate the Transactions. Buyer has taken all action necessary to authorize the execution and delivery of each Transaction Agreement to which it is a party, the performance of its respective obligations thereunder, and the consummation of the Transactions. Each Transaction Agreement to which Buyer is a party has been duly authorized by, and has been or will be duly executed, and delivered by, and, assuming the due authorization, execution and delivery thereof by each counterparty, is Enforceable against, Buyer.

**Section 4.03 Governmental Authorization** Except as set forth in Section 4.03 of the Buyer Disclosure Schedule, the execution, delivery and performance by Buyer of the Transaction Agreements to which it is a party and the consummation of the Transactions require no action by or in respect of, or filing with, any Governmental Body other than any such action or filing (a) contemplated by, taken or made in connection with this Agreement or (b) as to which the failure to take, make or obtain would not reasonably be expected to have, individually or in the aggregate, a Buyer Material Adverse Effect.

**Section 4.04 Noncontravention** The execution, delivery and performance by Buyer of the Transaction Agreements to which it is a party and the consummation of the Transactions do not and will not (a) result in a violation of the organizational documents of Buyer, (b) violate any applicable Law in any manner or (c) assuming that all Required Consents are obtained, constitute a default under or give rise to any right of termination, cancellation or acceleration of any right or obligation or to a loss of any

benefit relating to the Business to which Buyer is entitled under any provision of any Contract binding upon Buyer.

**Section 4.05 Finders' Fees**□There is no investment banker, broker, finder or other intermediary which has been retained by or is authorized to act on behalf of Buyer or any of its Affiliates who might be entitled to any fee or commission from Seller or any of its Affiliates upon consummation of the Transactions.

**Section 4.06 Available Funds**□Buyer has available to it as of the date of this Agreement, and will have available to it at the Closing, all of the funds required to be provided by Buyer for the consummation of the Transactions and for the satisfaction of all of Buyer's obligations under the Transaction Agreements (collectively, the "**Financing**").

**Section 4.07 Litigation**□Except as set forth in Section 4.07 of Buyer Disclosure Schedule, there is no action, suit, investigation or proceeding pending against, or to the Knowledge of Buyer, threatened against or affecting, Buyer before any court or arbitrator or any Governmental Body which, individually or in the aggregate, would reasonably be expected to have a Buyer Material Adverse Effect or which in any manner challenges or seeks to prevent, enjoin, alter or materially delay the transactions contemplated by the Transaction Agreements.

**Section 4.08 No Other Representations**□Buyer has inspected and investigated the Purchased Assets and knowingly and voluntarily accepts such Purchased Assets on an "AS IS, WHERE IS" basis, subject only to the express representations and warranties and other terms and conditions of this Agreement.

**Section 4.09 Representations Complete**□Except as and to the extent set forth in this Agreement, Buyer makes no representations or warranties whatsoever to Seller and hereby disclaims all liability and responsibility for any representation, warranty, statement, or information not included herein that was made, communicated, or furnished (orally or in writing) to Seller or its representatives (including any opinion, information, projection, or advice that may have been or may be provided to Seller by any director, officer, employee, agent, consultant, or representative of Buyer or Affiliate thereof).

**Section 4.10 Buyer's Acknowledgement**□Buyer acknowledges and agrees that any Claims arising under Seller's or Buyer's representations and warranties shall be subject to the limitations on liabilities and other provisions set out in ARTICLE 10.

## ARTICLE 5

### COVENANTS OF SELLER

**Section 5.01 Conduct of Business Through the Closing**□Seller covenants and agrees that, between the date hereof and the Closing Date, it shall, except as set forth on Schedule 5.01 attached hereto or as otherwise contemplated by this Agreement or as required by Law:

(a) conduct the operations of the Business in the ordinary course consistent with prior practice and shall use commercially reasonable efforts to (i) preserve intact the current business organization, (ii) continue to make capital expenditures consistent with the budget of the

Business, (iii) maintain its relations with Governmental Bodies, suppliers, customers, vendors, lessors, creditors, employees, agents, licensors and other Persons having a business relationship with the Business and (iv) maintain its Permits and comply with applicable Laws, including continuing its compliance efforts with Effluent Limit Guideline regulations under the Clean Water Act and with respect to the McElroy's Run impoundment;

(b) not, between the Execution Date and the Closing Date without the written consent of Buyer (which consent shall not be unreasonably withheld, conditioned or delayed), with respect to the Business, the Purchased Assets or the Assumed Liabilities:

(i) enter into any Contract or commitment which would have been required to be set forth on Schedule 2.01(d) if in effect on the Execution Date or enter into any Contract which cannot be assigned to Buyer, other than, in either case, any Contract or commitment that requires annual payments to or from the Business of less than \$100,000 in the aggregate and (A) is to be fully performed prior to the Closing, (B) will not adversely impact the Business, including Purchased Assets and Assumed Liabilities, on and after the Closing Date, or (C) is entered into in the ordinary course of business consistent with past practice;

(ii) sell, transfer, lease or otherwise dispose of any material property or assets that would constitute Purchased Assets except in the ordinary course of business consistent with past practice;

(iii) make any capital expenditures or enter into a commitment with respect thereto, except with respect to capital expenditures or commitments in accordance with Good Utility Practice that do not exceed \$100,000 in the aggregate unless included in the Budget or as may be required to respond to an emergency relating to the Generating Facility;

(iv) hire any Business Employee;

(v) enter into any employment agreement, severance, retention or bonus agreement or other Contract with or with respect to a Business Employee;

(vi) terminate or fail to take action to renew a Permit;

(vii) fail to maintain the Records in the usual, regular and ordinary manner, on a basis consistent with past practice;

(viii) transfer, sell, lease or otherwise mortgage, pledge or dispose of, remove from the Real Property or subject to any Lien (other than a Permitted Lien) any of the Purchased Assets (as the same exists on the Execution Date) excluding the Real Property, other than in the ordinary course of business consistent with past practice or with respect to obsolete or unnecessary Facilities or Tangible Personal Property;

(ix) transfer, sell, lease or otherwise mortgage, pledge or dispose of or subject to any Lien (other than a Permitted Lien) any of the Real Property;

- (x) allow the levels of raw materials, supplies, works-in-process, spare parts or other materials included in the Tangible Personal Property to vary in any Material respect from the levels customarily maintained in connection with the Business;
  - (xi) enter into, amend, modify, terminate or waive any right under any Assumed Contract other than in the ordinary course of business consistent with past practice;
  - (xii) commence, initiate, settle, satisfy, release or forgive any action, suit, investigation or proceeding relating to the Business (A) for an amount in excess of \$100,000 or (B) that seeks non-monetary, equitable or injunctive relief or alleges any violation of criminal Law;
  - (xiii) fail to maintain in full force and effect in all material respects or fail to replace or renew, the insurance policies set forth on Section 3.21 of the Seller Disclosure Schedule or policies substantially similar thereto;
  - (xiv) make any new, or change any existing, election with respect to Taxes, settle any Tax liability, or enter into any agreement with respect to Taxes, in each case, to the extent that any such action would reasonably be expected to have an adverse impact on the Purchased Assets with respect to a Post-Closing Tax Period; or
  - (xv) agree in writing or otherwise commit to take any of the actions described in this Section 5.01(b).
- (c) maintain the Purchased Assets in the ordinary course of business consistent with past practice.

#### **Section 5.02 Access to Information** ☐

- (a) From the Execution Date through the Closing Date, Seller will, to the extent permitted by Law:
- (i) give Buyer, its counsel, financial advisors, auditors and other authorized representatives reasonable access to all books, records, plans, offices and other facilities and properties in the possession of Seller to the extent relating primarily to the Business; provided that prior to Buyer being given such access, Buyer shall have obtained the written or oral approval of Nicholas Fernandez (which approval will not be unreasonably withheld, conditioned or delayed);
  - (ii) furnish Buyer with copies of, or access to review, the Records upon request;
  - (iii) subject to privilege restrictions, furnish Buyer with a copy of each notice of violation or similar correspondence within the preceding three (3) years from any Governmental Body or any notice of an event of default by Seller or the applicable counterparty with respect to any Assumed Contract or Assumed Liability;



(iv) subject to privilege restrictions, furnish Buyer with copies of all reports, certifications, responses or other documents relating primarily to the Business submitted by Seller to, or received from, NERC in connection with any audit, certification, report or self-report, spot check, investigation, or otherwise, and demonstrating, purporting to demonstrate, or relied upon by Seller to demonstrate compliance with applicable Reliability Standards in each case within the preceding three (3) years;

(v) furnish Buyer with all such other information in the possession of Seller as shall be reasonably necessary to enable Buyer, at its request, to verify the accuracy of the representations and warranties of Seller contained in this Agreement; provided, however, that (A) any such access or response to requests shall be given during regular business hours and conducted in such manner as not to interfere unreasonably with the operation of the Purchased Assets, (B) Seller shall not be required to take any action which would constitute a waiver of the attorney-client or other privilege, and (C) Seller need not supply Buyer with any information which Seller is under a legal or contractual obligation not to supply

(vi) furnish to Buyer, its counsel, financial advisors, auditors and other authorized representatives such other information relating to the Business as such Persons may reasonably request;

(vii) instruct the employees, counsel and financial advisors of Seller and its Affiliates to cooperate reasonably with Buyer in its investigation of the Business; and

(viii) permit Business Employees to be reasonably available for interview, if so requested in the sole discretion of Buyer.

Any investigation pursuant to this Section 5.02 shall be given, to the extent practicable, during regular business hours and conducted in such manner as not to interfere unreasonably with the conduct of the Business. Notwithstanding the foregoing, Buyer shall not have access to (i) personnel records of Seller relating to individual performance or evaluation records, medical histories or other information which in Seller's good faith opinion is sensitive or the disclosure of which could subject Seller to risk of liability, (ii) any information which is subject of any attorney-client or other privilege in favor of Seller or any confidentiality obligation by which Seller is bound or (iii) any information the provision of which Seller in good faith believes may cause Seller to violate applicable Law. Notwithstanding anything to the contrary in this Agreement, Buyer may not, prior to the Closing Date, undertake any environmental sampling or testing of any type of the operations, business and/or properties of Seller, including with respect to the Purchased Assets or the Business other than (i) with respect to a Phase I environmental site assessment or environmental compliance audit with respect to the Real Property or (ii) with Seller's prior written consent (which shall not be unreasonably withheld, conditioned or delayed).

(b) After the Closing Date, Seller will, and will cause each of its applicable Subsidiaries to, promptly afford Buyer and its agents reasonable access to its books of account, financial and other records, information, and properties in its possession, to the extent necessary or useful for Buyer in connection with any audit, investigation, dispute or litigation or any other

reasonable business purpose relating to the Business (for example, for purposes of any tax or accounting audit or any claim or litigation matter not being actively litigated between Buyer and Seller); provided that any such access by Buyer shall be given during regular business hours and shall not unreasonably interfere with the conduct of the business of Seller or such Subsidiary. Buyer shall bear all of the out-of-pocket costs and expenses (including, without limitation, attorneys' fees, but excluding reimbursement for general overhead, salaries and employee benefits) reasonably incurred in connection with the foregoing.

(c) Seller shall, by the Closing Date, provide or make available to Buyer such reasonably available documents as Buyer reasonably requests at least ten (10) Business Days prior to Closing Date regarding the Generating Facility design, construction, procurement, testing and operations, including testing related to the capacity of the Generating Facility, that are in possession of Seller and that are included as part of the Purchased Assets.

#### Section 5.03 Further Assurances□

At any time and from time to time after the Closing, Seller shall, at the request of Buyer, and at Buyer's sole expense, use all commercially reasonable efforts to execute and deliver such further instruments of conveyance, sale, transfer and assignment, and take such other actions as may be necessary or appropriate to effectuate, record or perfect the transfer of the Purchased Assets to Buyer, free and clear of all Liens (other than Permitted Liens), to confirm the title of the Purchased Assets to Buyer or otherwise to effectuate and consummate any of the transactions contemplated hereby or by the other Transaction Agreements, including using its commercially reasonable efforts to ensure satisfaction of the conditions precedent to Seller's obligations hereunder, including obtaining all necessary consents, approvals and authorizations of, and making all required notices or filings with, third parties required to be obtained or made in order to consummate the Transactions hereunder.

#### Section 5.04 Casualty□

(a) If, between the Execution Date and the Closing Date, a casualty event causes damage to any portion of the Generating Facility or the Real Property resulting in a material impairment to the value of the Purchased Assets, then Seller shall promptly employ a qualified firm reasonably acceptable to Buyer to estimate (i) the reasonable cost of restoring the damaged or destroyed assets to a condition reasonably comparable to their condition immediately before the casualty event, (ii) the losses, costs and damages, if any, that with reasonable certainty would be realized by Buyer of the Purchased Assets during the period after Closing due to the unavailability of the Generating Facility as a result of the casualty event, and (iii) the margin, if any, that with reasonable certainty would have been realized by Buyer of the Purchased Assets during the period after Closing if the casualty event had not caused damage to or destroyed the assets, as adjusted to account for any Tax or other benefit associated with such damage or estimated loss, respectively (together, the restoration costs, losses, costs, damages and estimated margin are referred to herein as the "**Restoration Cost**").

(i) If the Restoration Cost is U.S. \$20,000,000 or less, then (A) neither Buyer nor Seller shall have the right or option to terminate this Agreement, but (B) at the option of Seller, (i) Seller shall (at Seller's sole cost and expense) restore the damaged or destroyed assets to a condition reasonably comparable to their condition immediately

before the casualty event, or (ii) the Purchase Price shall be reduced by an amount equal to the Restoration Cost.

(ii) If the Restoration Cost exceeds U.S. \$20,000,000, then either Buyer or Seller may terminate this Agreement by written notice to the other Party delivered no later than thirty (30) days after delivery of the estimate of the Restoration Cost by such firm; provided that, if neither Party elects to terminate this Agreement pursuant to this Section 5.04(a)(ii), then Section 5.04(a)(i)(B) shall apply.

(b) If this Agreement is not terminated pursuant to the provisions of Section 5.04(a)(ii), and Seller elects to restore the damaged or destroyed assets pursuant to Section 5.04(a)(i)(B)(i), the Parties hereby agree that the Closing shall be delayed until such time as Seller has completed its restoration of the damaged Purchased Assets to a condition reasonably comparable to their condition immediately before the casualty event in accordance with the terms of this Section 5.04 (without regard to whether the conditions under ARTICLE 9 have been satisfied or otherwise waived).

(c) If this Agreement is not terminated pursuant to Section 5.04(a)(ii) and Seller has elected to either restore the damaged or destroyed Purchased Assets pursuant to Section 5.04(a)(i)(B)(i) or reduce the Purchase Price by the Restoration Cost pursuant to Section 5.04(a)(i)(B)(ii), Buyer shall fully cooperate with Seller to pursue any claims Seller may have under Seller's applicable insurance policies in connection with such casualty event occurring prior to the Closing Date (which shall for the avoidance of doubt be for the benefit of Seller).

#### Section 5.05      **Condemnation.**

If, between the Execution Date and the Closing Date, any portion of the Generating Facility or Real Property is taken by condemnation, causing a material impairment to the value of the Purchased Assets, then Seller shall promptly determine (i) the condemnation value of such condemned assets; (ii) the losses, costs, and damages, if any, that with reasonable certainty would be realized by Buyer during the period after Closing due to the unavailability of the Generating Facility or Real Property as a result of such condemnation; and (iii) the estimated margin, if any, that with reasonable certainty would have been realized by Buyer of the Purchased Assets during the period after Closing if the assets had not been taken by condemnation, as adjusted to account for any Tax benefit associated with such condemnation or estimated loss, respectively (together, the condemnation value, losses, costs and damages and estimated margin are referred to herein as the "**Condemnation Value**").

(a) If the Condemnation Value is U.S. \$20,000,000 or less, then (i) neither Buyer nor Seller shall have the right or option to terminate this Agreement, but (ii) the Purchase Price shall be reduced by an amount equal to the Condemnation Value.

(b) If the Condemnation Value exceeds U.S. \$20,000,000, then either Buyer or Seller may terminate this Agreement by written notice to the other Party delivered no later than thirty (30) days after delivery of the determination of the Condemnation Value; provided that, if neither Party elects to terminate this Agreement pursuant to this Section 5.05(b), then Section 5.05(a)(ii) shall apply.

If this Agreement is not terminated pursuant to the provisions of Section 5.05(b), then Section 5.05(a)(ii) shall apply, and Buyer hereby agrees to fully cooperate with Seller in connection with Seller's recovery of any award or settlement with respect to such condemnation (which shall for the avoidance of doubt be for the benefit of Seller), and each of Buyer and Seller and their respective representatives shall cooperate as reasonably requested by the other Party to maximize the value of any such award or settlement.

**Section 5.06      Exclusivity.**

During the period commencing on the Execution Date and ending on the earlier of (a) the Closing Date or (b) the date this Agreement is terminated as provided in ARTICLE 11, Seller will not, nor will it permit any of its Subsidiaries or anyone acting on behalf of any of them to, solicit or enter into any discussions or negotiations with, or furnish or cause to be furnished any information concerning the Generating Facility, the Real Property, the other Purchased Assets or the Business to, any Person (other than Buyer or its representatives) in connection with an acquisition of the Purchased Assets, directly or indirectly whether by merger, purchase of equity interests, sale of assets or any other means.

**Section 5.07      Real Property**

(a) Title Insurance and Survey. Buyer shall (i) within thirty (30) days of the Execution Date, use commercially reasonable efforts to obtain (and promptly furnish a copy to Seller) a new owner's title insurance commitment for the Real Property issued by a national title insurance company chosen by Buyer at Buyer's sole discretion (the "***Title Company***"), which commitment shall include a commitment to issue any endorsements which may be reasonably requested by Buyer, and which commitment shall commit to insuring Buyer's fee interest in the Real Property, in an amount reasonably determined by Buyer, free and clear of all Liens except for the Permitted Liens; and (ii) within sixty (60) days of the Execution Date, use commercially reasonable efforts to obtain (and promptly furnish a copy to Seller) an updated survey of the Real Property (ALTA/ACSM 2016 Standard), identifying the matters set forth on the title commitment delivered to Buyer pursuant to this Section 5.07, and certified to Buyer and to the title insurance company providing a commitment to insure title pursuant to this Section 5.07. Seller agrees to deliver affidavits at Closing of Seller's officers, employees or agents as may be reasonably requested by the title insurer or Buyer in order to delete the "standard exceptions" provided in any commitment delivered pursuant to this Section 5.07, obtain the endorsements reasonably requested by Buyer pursuant to this Section 5.07, and affirm the representation set forth in Section 3.05 (Finder's Fees), but only to the extent that such affidavits and other instruments do not impose personal liability upon the affiant. The survey and the title commitment, any policy of title insurance, and the endorsements shall be at Buyer's sole cost and expense.

(b) Buyer Objections. Within thirty (30) days following the delivery to Buyer of the survey pursuant to Section 5.07(a) above, Buyer shall have the right to object in writing to any matters revealed by the title commitment, the survey, or any leases of real property or Liens identified by Buyer pursuant to this Agreement (other than the Liens referenced in clauses (i), (ii), and (iv) under the definition of Permitted Liens) so long as such identified objectionable matter impairs the operation of the Generating Facility in any Material way or Materially impairs the title to the Real Property (with any such matter being a "***Buyer Objection***"). Unless Buyer shall timely identify Buyer Objections, all such matters shall be deemed to constitute additional

Permitted Liens. Seller shall notify Buyer in writing within ten (10) days of receiving a Buyer Objection (the “***Seller Response Deadline***”) as to whether Seller intends to remove or cause to be removed, insured over or insured against loss from any Buyer Objection. Should Seller elect to remove or cause to be removed, insured over or insured against loss from any Buyer Objection, Seller’s election shall thereafter be a condition precedent to Closing pursuant to Section 9.02, and as to Buyer Objections affecting title to the Real Property, be deemed effected by the issuance of title insurance eliminating, insuring over or issuing an endorsement insuring against loss from the Buyer Objection. Should Seller fail to respond to a Buyer Objection as provided herein (and for the avoidance of doubt Seller is not required to respond or to cause any Buyer Objection to be removed or insured over or against), Buyer shall, within ten (10) days following the Seller Response Deadline, elect in writing to either (x) waive such Buyer Objection and proceed to Closing, whereupon the waived Buyer Objection shall thereafter be deemed a Permitted Lien, or (y) terminate this Agreement, whereupon Buyer and Seller shall have no further obligations except for those obligations which expressly survive the termination hereof.

(c) Additional Objections. Notwithstanding the foregoing, Buyer may identify as a Buyer Objection any title or survey matter which would Materially impair the operation of the Generating Facility or Materially impair the title to the Real Property and arises prior to Closing but (i) as to any title matter, arises subsequent to the date of the title commitment delivered to Buyer pursuant to Section 5.07(a) above, or (ii) as to any survey matter, arises subsequent to the date of revision of the survey delivered to Buyer pursuant to Section 5.07(a) above.

**Section 5.08 Pre- and Post-Closing Transition Cooperation** □ Prior to the Closing Date, Seller and its representatives shall reasonably cooperate with Buyer and its authorized representatives in the interest of planning and facilitating an orderly transition of the Generating Facility and the Business, including permitting Buyer and its authorized representatives reasonable access to the Generating Facility in accordance with Section 5.02 to set up Buyer’s own hardware and software systems to replace any Excluded Assets that may be used in connection with the operation of the Business in the ordinary course. Buyer and Seller shall reasonably cooperate to ensure that there is no interruption in the operation or availability of the Generating Facility as a result of such transition.

**Section 5.09 Covenant to Provide Assets or Services** □

(a) If Seller breaches the representations set forth in Section 3.19, then Seller shall provide such asset (or a reasonably suitable replacement) to Buyer as promptly as practicable after the Closing (but in any event within ten (10) Business Days after discovery of the breach), at no charge or expense to Buyer, and Seller and Buyer shall execute a customary assignment and assumption document; provided, that Buyer shall not be required to take possession of and accept any asset under this Section 5.09.

(b) If Section 3.19 of the Seller Disclosure Schedule collectively fail to disclose any assets necessary (but not exclusive) to operate the Business in the manner presently and historically over the past year operated by Seller, then Seller shall use reasonable best efforts to make available to Buyer such undisclosed and missing assets for a duration not to exceed sixty (60) days from the later of (i) Closing or (ii) the time such asset is identified by Seller or Buyer (provided that if Buyer is not able to procure such asset for itself by the end of such sixty (60) day period or to make other arrangements to satisfy itself using commercially reasonable efforts,

Seller shall provide such asset for an additional period of up to sixty (60) days until Buyer procures such asset).

(c) If any service that is necessary to operate the Business in the manner presently and historically over the past year operated by Seller is not set forth on Section 3.19 of the Seller Disclosure Schedule, Seller shall provide such service to Buyer as promptly as practicable after the Closing, for a duration not to exceed sixty (60) days from the later of (i) Closing or (ii) the time such asset is identified by Seller or Buyer (provided that if it Buyer is not able to procure such service for itself by the end of such sixty (60) day period using commercially reasonable efforts, Seller shall provide such service for an additional period of up to sixty (60) days until Buyer procures such service).

(d) Seller will work in good faith with Buyer to identify at Closing any assets or services which may be subject to this Section 5.09, and will provide such assets or services to Buyer pursuant to clauses (a) – (c) above.

## ARTICLE 6 COVENANTS OF BUYER

**Section 6.01 Access**□After the Closing Date, Buyer will promptly afford Seller and its agents reasonable access to its properties, books, records, and employees to the extent necessary to permit Seller to determine any matter relating to its rights and obligations hereunder or to any period ending before the Closing Date (for example, for purposes of any Tax or accounting audit or any claim or litigation matter); provided that any such access by Seller shall not unreasonably interfere with the conduct of the business of Buyer. Seller will hold, and will cause its officers, directors, employees, accountants, counsel, consultants, advisors and agents to hold, in confidence, unless, in the judgment of its legal counsel, compelled to disclose by judicial or administrative process or obligated to disclose by other requirements of Law, all confidential documents and information concerning Buyer or the Purchased Assets reasonably deemed as such by a written designation by Buyer and provided to Seller pursuant to this Section 6.01.

**Section 6.02 Financing**□Buyer covenants and agrees with Seller that between the Execution Date and the Closing Date, Buyer shall use its reasonable best efforts to obtain the Financing by the Closing Date. Buyer agrees and acknowledges that Buyer's obligations under this Agreement, including its obligation to effect the Closing, are not dependent on Buyer obtaining the Financing.

## ARTICLE 7 COVENANTS OF BUYER AND SELLER

**Section 7.01 Further Assurances**□Subject to the terms and conditions of this Agreement, Buyer and Seller will use their commercially reasonable efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary or desirable under applicable Laws to consummate the transactions contemplated by this Agreement. Seller and Buyer agree to execute and deliver, or cause to be executed and delivered, such other documents, certificates, agreements and other writings as may be reasonably necessary after the

Closing to implement expeditiously the transactions contemplated by this Agreement and to vest in Buyer good title to the Purchased Assets to the extent they are conveyed as contemplated herein and in any case subject to Permitted Liens.

**Section 7.02      Certain Actions**□ Seller and Buyer shall cooperate with one another (a) in determining whether any action by or in respect of, or filing with, any Governmental Body is required, or any actions, consents, approvals or waivers are required to be obtained from parties to any material Contracts, in connection with the consummation of the transactions contemplated by this Agreement and (b) in taking such actions or making any such filings, furnishing information required in connection therewith and seeking timely to obtain any such actions, consents, approvals or waivers.

**Section 7.03      Public Announcements**□ Neither Party will issue any press release or make any public statement with respect to this Agreement or the transactions contemplated hereby without the prior written consent of the other Party, except for any press releases or public statements the making of which are required by applicable Law, regulation or any listing agreement with any national securities exchange. Notwithstanding the foregoing, Buyer (with Seller's reasonable assistance at Buyer's expense, if requested) shall be entitled and obliged to, promptly after the Closing, to announce to Persons doing business with the Business the sale of the Business and the Purchased Assets to Buyer.

**Section 7.04      Supplements to Schedules and Seller Disclosure Schedule**□ Seller may: (i) no later than 60 days following the date of this Agreement by written notice to Buyer, supplement the Real Property listed on Schedule 2.01(a), the Tangible Personal Property listed on Schedule 2.01(c)(i) and Schedule 2.01(c)(ii), the Assumed Contracts listed on Schedule 2.01(d), the listing of Environmental Permits, underground storage tanks or pumps, asbestos containing material, materials or equipment containing polychlorinated biphenyls, and landfills, surface impoundments, or disposal areas listed on Section 3.14 of the Seller Disclosure Schedule, and the Permits listed on Section 3.15(a) of the Seller Disclosure Schedule; and (ii) only with respect to matters arising after the date of this Agreement, from time to time prior to the Closing by prior written notice to Buyer, supplement the Seller Disclosure Schedule or add a schedule or section to the Seller Disclosure Schedule with a corresponding reference to be added in this Agreement (such added Schedule to be deemed a supplement hereunder) to disclose any matter occurring after the date of this Agreement which, if occurring prior to the date hereof, would have been required to be set forth or described on the Seller Disclosure Schedule or to correct any inaccuracy or breach in the warranties made by Seller in this Agreement. None of such supplements of the Seller Disclosure Schedule pursuant to clause (ii) above shall be deemed to cure the representations or warranties to which such matters relate with respect to rights to indemnification pursuant to ARTICLE 10 or conditions set forth in ARTICLE 9, or otherwise affect any other term or condition contained in this Agreement; provided, however, that unless Buyer shall have delivered a notice of breach pursuant to Section 11.01(d) (to the extent Buyer is entitled to deliver such notice pursuant to such Section) within fifteen (15) Business Days of the receipt by Buyer of any supplement to the Seller Disclosure Schedule pursuant to clause (ii) of this Section 7.04 (together with disclosure to Buyer of information reasonably requested by Buyer to enable Buyer to understand, and evaluate the effects of, such supplement), then Buyer shall have waived any and all rights to terminate this Agreement, pursuant to ARTICLE 11 or otherwise, or to consider any condition to Closing not to be satisfied, arising out of or relating to the contents of such supplement.

For the avoidance of doubt, and notwithstanding anything to the contrary in this Section 7.04, supplements made pursuant to clause (i) of this Section 7.04 shall be limited to updates of the listing of Purchased Asset required by the representation or warranty corresponding to the applicable Schedule or Seller Disclosure Schedule (or, with respect to Section 3.14 of the Seller Disclosure Schedule, the listing of Purchased Assets that contain or include underground storage tanks or pumps, asbestos containing material, materials or equipment containing polychlorinated biphenyls, and landfills, surface impoundments, or disposal areas pursuant to Section 3.14(d), in addition to the listing of Environmental Permits pursuant to Section 3.14(e)), and any supplement of a Schedule or Seller Disclosure Schedule with other information that may constitute an exception to, correction of, or disclosure against, the associated representation or warranty, or otherwise, shall be deemed to be made pursuant to clause (ii) of this Section 7.04 regardless of how identified when delivered by Seller.

**Section 7.05 PJM Capacity Supply Obligation** If and to the extent that the Generating Facility has cleared in any of the PJM capacity auctions occurring before the Closing for periods of time that are subsequent to the Closing, the capacity supply rights and obligations that are the result of such PJM capacity auctions and that are associated with the Generating Facility will be reflected in PJM's eRPM system. At the Closing, the Parties will take all such actions as are necessary to transfer the Generating Facility from Seller's PJM eRPM account to Buyer's PJM eRPM account, and to transfer any and all PJM capacity supply rights and obligations as may be associated with the Generating Facility as of the Closing from Seller to Buyer.

**Section 7.06 Approvals** Each Party shall use commercially reasonable efforts to obtain all authorizations, consents, actions, orders, and approvals of, and to give all notices to and make all filings with, all Governmental Bodies and third parties that are, may be or become necessary for its execution and delivery of, and the performance of its obligations under, this Agreement and the consummation of the Transactions (including the Parties' joint application to FERC under Section 203 of the Federal Power Act and obtaining consent from the applicable trustee under the Pollution Control Bond Documents for the transfer the Pollution Control Bond Obligations to, and the assumption thereof by, Buyer), and will cooperate fully with the other Party in promptly seeking to obtain all such authorizations, consents, actions, orders, and approvals, giving such notices, and making such filings. Seller and Buyer shall jointly file for the approval of FERC under Section 203 of the Federal Power Act. Seller and Buyer shall jointly file for approval of the Public Service Commission of West Virginia. Notwithstanding anything herein to the contrary, Seller acknowledges and agrees that Buyer and its Affiliates shall not be required to dispose of or sell assets or properties, hold separate particular assets or categories of assets, or businesses, or agree to dispose of or hold separate one or more assets or properties in connection with the Parties' filings pursuant to this Section 7.06.

**Section 7.07 Notices of Certain Events** Without limiting either Party's representations or warranties in this Agreement, each of Seller and Buyer shall promptly notify the other Party of:

(a) any notice or other communication received from any Person alleging that the consent of such Person is or may be required in connection with the Transactions;



(b) any notice or other communication received from any Governmental Body in connection with the Transactions; and

(c) any actions, suits, claims, investigations or proceedings commenced relating to the Purchased Assets or the Business of which it receives notice and which, individually or in the aggregate, would reasonably be expected to have a Seller Material Adverse Effect or Buyer Material Adverse Effect, respectively, or which in any manner challenges or seeks to prevent, enjoin, alter or materially delay the Transactions.

Section 7.08 [Reserved].

Section 7.09 **Confidentiality** Seller acknowledges that information concerning the Purchased Assets has competitive value to Buyer, and Seller agrees that after the Closing, all information that prior to Closing would have been "Confidential Information" under the Confidentiality Agreement shall become confidential information of Buyer ("**Confidential Information**"), and Seller and each of its Subsidiaries shall maintain the confidentiality of such Confidential Information in accordance with the terms of the Confidentiality Agreement as if it were the party to whom the Evaluation Material was disclosed under the Confidentiality Agreement.

Section 7.10 **Bulk Sales Laws** Each of the parties hereby waives compliance with the provisions of any bulk sales, bulk transfer or similar Laws of any jurisdiction that may otherwise be applicable with respect to the sale of any or all of the Purchased Assets to Buyer; it being understood that any liabilities arising out of the failure of Seller to comply with the requirements and provisions of any bulk sales, bulk transfer or similar Laws of any jurisdiction which would not otherwise constitute Assumed Liabilities shall be treated as Excluded Liabilities.

Section 7.11 **Reactive Service from the Generating Facility** The Parties agree that on and after the Closing, Buyer is entitled to the then-effective annual revenue requirement (and a pro rata share of such revenue requirement for any partial year) for Reactive Service from the Generating Facility as established in FERC Docket Nos. ER14-1883 (currently U.S. \$2,234,551.52). The Parties agree to cooperate to ensure that Seller's annual revenue requirement for Reactive Service that is associated with the Generating Facility is allocated to Buyer to become effective, as of the Closing Date, including making all appropriate filings with FERC to effectuate such allocation. Notwithstanding the above, to the extent that, on or after the Closing Date, PJM continues to remit any amounts of the then-effective annual revenue requirement for the Generating Facility to Seller or its Affiliates, Seller shall cause such amounts to be paid over promptly to Buyer.

## ARTICLE 8

### TAX MATTERS

Section 8.01 **Tax Definitions** The following terms, as used herein, have the following meanings:

**“Pre-Closing Tax Period”** means (i) any Tax period ending before the Closing Date and (ii) with respect to a Tax period that commences before but ends on or after the Closing Date, the portion of such period up to and including the day prior to the Closing Date.

**“Tax”** means any tax, governmental fee or other like assessment or charge of any kind whatsoever including, without limitation, any federal, state, local, or non-U.S. income, gross receipts, license, payroll, employment, excise, severance, stamp, occupation, premium, windfall profits, environmental (including taxes under Code §59A), capital stock, franchise, profits, withholding, social security (or similar), unemployment, disability, real property, personal property, sales, use, transfer, registration, value added, alternative or add-on minimum, estimated, or other tax of any kind whatsoever, including any interest, penalty, or addition thereto, whether disputed or not and including any obligations to indemnify or otherwise assume or succeed to the Tax liability of any other Person that are imposed by any Governmental Body (a **“Taxing Authority”**) responsible for the imposition of any such tax (domestic or foreign).

#### Section 8.02      **Tax Cooperation; Allocation of Taxes**□

(a) Buyer and Seller agree to furnish or cause to be furnished to each other, upon request, as promptly as practicable, such information and assistance relating to the Business and the Purchased Assets (including, without limitation, access to books and records) as is reasonably necessary for the filing of all Tax Returns, the making of any election relating to Taxes, the preparation for any audit by any Taxing Authority, and the prosecution or defense of any claim, suit or proceeding relating to any Tax. Buyer shall retain all books and records with respect to Taxes pertaining to the Purchased Assets for a period of at least six (6) years following the Closing Date. Seller and Buyer shall cooperate with each other in the conduct of any audit or other proceeding relating to Taxes involving the Purchased Assets or the Business. Notwithstanding anything herein to the contrary, the Parties agree, to the extent consistent with applicable Law, to treat all machinery and equipment included in the Purchased Assets as personal property for purposes of any Tax filings or elections.

(b) All real property Taxes, personal property Taxes and similar *ad valorem* obligations levied with respect to the Purchased Assets for a taxable period which includes (but does not end on) the Closing Date (collectively, the **“Apportioned Obligations”**) shall be apportioned between Seller and Buyer based on the number of days of such taxable period for each Taxing Authority included in the Pre-Closing Tax Period and the number of days of such taxable period on and after the Closing Date (with respect to any such taxable period, the **“Post-Closing Tax Period”**) (i.e., in accordance with the fiscal year method of Tax proration). Seller shall be liable for the proportionate amount of such Taxes that is attributable to the Pre-Closing Tax Period, and Buyer shall be liable for the proportionate amount of such Taxes that is attributable to the Post-Closing Tax Period.

(c) All excise, sales, use, non-recoverable VAT, stamp duty, registration stamp, recording, documentary, conveyancing, franchise, property, transfer, gains and similar Taxes, levies, charges and fees (collectively, **“Transfer Taxes”**) incurred in connection with the transactions contemplated by this Agreement shall be borne by Seller. Buyer and Seller shall cooperate in providing each other with any appropriate resale exemption certifications and other similar documentation. Seller shall be solely responsible for all income, franchise, gross income,

gross receipts, business occupation and similar Taxes it incurs in connection with the Transactions.

(d) Apportioned Obligations and Transfer Taxes shall be timely paid, and all applicable filings, reports and returns shall be filed, as provided by applicable Law. The paying party shall be entitled to reimbursement from the non-paying party to the extent provided in Section 8.02(b) or (c), as the case may be. Upon payment of any such Apportioned Obligation or Transfer Tax, the paying party shall present a statement to the non-paying party setting forth the amount of reimbursement to which the paying party is entitled under Section 8.02(b) or (c), as the case may be, together with such supporting evidence as is reasonably necessary to calculate the amount to be reimbursed. The non-paying party shall make such reimbursement promptly but in no event later than thirty (30) days after the presentation of such statement. Any payment not made within such time shall bear interest at the annual rate of LIBOR + 6% for each day until paid.

## ARTICLE 9

### CONDITIONS TO CLOSING

**Section 9.01 Conditions to Obligations of Buyer and Seller**□The obligations of each of Buyer and Seller to consummate the Closing are subject to the satisfaction, on or before the Closing, of each of the following conditions unless waived in writing by each of the Parties:

(a) There must not be issued and in effect any Order restraining or prohibiting the Transactions.

(b) (i) the FERC Approval shall have been received, (ii) approval from the Public Service Commission of West Virginia shall have been received and (iii) the consents, approvals, orders, authorizations or actions of or by any Governmental Body set forth on Schedule 9.01(b) shall have been obtained; provided, that the approvals, consents, orders, authorizations or actions described in this Section 9.01(b) shall, in each case, be in a form and substance satisfactory to Buyer in its sole discretion (for the avoidance of doubt, if there are any conditions or requirements in any such approvals, consents, orders, authorizations or actions that are not so satisfactory, Buyer shall not be required to proceed with the Closing and the Agreement may be terminated in accordance with Section 11.01).

(c) Seller and Buyer must have received the consents set forth on Schedule 9.01(c).

**Section 9.02 Conditions to Obligation of Buyer**□The obligation of Buyer to consummate the Closing is subject to the satisfaction, on or before the Closing, of each of the following further conditions unless waived in writing by Buyer:

(a) Seller shall have performed in all material respects the covenants and agreements contained in this Agreement that are required to be performed by it on or prior to the Closing Date.

(b) (i) Except for the Seller Fundamental Representations, each of the representations and warranties of Seller set forth in this Agreement shall be true and correct, except for such

failures of representations and warranties to be true and correct (without giving effect to any materiality qualification or standard contained in any such representations and warranties) which would not reasonably be expected to have, individually or in the aggregate, a Seller Material Adverse Effect, and (ii) each of the Seller Fundamental Representations shall be true and correct, in each of cases (i) and (ii), (x) on and as of the date hereof and (y) on and as of the Closing Date with the same effect as though such representations and warranties had been made on and as of the Closing Date (except for representations and warranties that expressly speak only as of a specific date or time which need only be true and correct as of such date or time).

(c) Since the Execution Date there shall not have occurred a Seller Material Adverse Effect. Seller shall have delivered to Buyer a certificate dated as of the Closing Date executed by Seller, certifying as to the foregoing statement.

(d) Buyer has received evidence of the release in form and substance reasonably satisfactory to Buyer of all Liens on any of the Purchased Assets other than Permitted Liens.

(e) Buyer has received evidence of the transfer or issuance of all Permits set forth on Schedule 9.02(e).

(f) Buyer shall have obtained with respect to the Real Property and to all real property leasehold interests included in the Purchased Assets, confirmation that the Title Company (subject to payment for all premiums and search costs related thereto) stands ready, willing, and able to issue an owner's or lessee's title insurance policy in the name of Buyer in accordance with the commitment issued and reviewed by Buyer pursuant to Section 5.07(a) (subject to Permitted Liens), with such commitment "marked up" contemporaneously with the Closing by a representative of the title insurer so as to (i) satisfy all requirements to the issuance of a policy pursuant to the commitment (including satisfying any requirements necessary to cause the deletion of the so-called "gap" exception) (ii) advance the effective date to a date not earlier than the Closing Date without the addition of any title exceptions, and (iii) result in an unconditional binding obligation on the part of the Title Company to issue a final policy pursuant to the commitment, subject to Permitted Liens, and Seller, and to the extent applicable, Buyer, shall have executed and delivered such affidavits and other instruments as may be reasonably requested by the Title Company in accordance with Section 5.07 in order to obtain such "marked-up" commitment.

(g) Buyer shall have received a certificate from an authorized officer of Seller, dated the Closing Date, to the effect that, to the best of such officer's actual knowledge, the conditions set forth in Section 9.02(a) and (b) have been satisfied.

**Section 9.03      Conditions to Obligation of Seller**□The obligation of Seller to consummate the Closing is subject to the satisfaction, on or before the Closing, of each of the following further conditions unless waived in writing by Seller:

(a) Buyer shall have performed in all material respects the covenants and agreements contained in this Agreement that are required to be performed by it on or prior to the Closing Date.

(b) (i) Except for the Buyer Fundamental Representations, each of the representations and warranties of Buyer set forth in this Agreement shall be true and correct, except for such failures of representations and warranties to be true and correct (without giving effect to any materiality qualification or standard contained in any such representations and warranties) which would not reasonably be expected to have, individually or in the aggregate, a Seller Material Adverse Effect, and (ii) each of the Buyer Fundamental Representations shall be true and correct, in each of cases (i) and (ii), (x) on and as of the date hereof and (y) on and as of the Closing Date with the same effect as though such representations and warranties had been made on and as of the Closing Date (except for representations and warranties that expressly speak only as of a specific date or time which need only be true and correct as of such date or time).

(c) Since the Execution Date there shall not have occurred a Buyer Material Adverse Effect.

(d) Seller shall have received a certificate from an authorized officer of Buyer, dated the Closing Date, to the effect that, to the best of such officer's actual knowledge, the conditions set forth in Section 9.03(a) and (b) have been satisfied.

## ARTICLE 10

### SURVIVAL; INDEMNIFICATION

Section 10.01 **Survival** ☐ The representations and warranties of the Parties contained in this Agreement shall survive the Closing Date for a period of twenty-four (24) months following the date thereof; provided, however, that (a) the representations and warranties of Seller contained in Section 3.01 (Corporate Existence and Power), Section 3.02 (Corporate Authorization), Section 3.04 (Noncontravention), Section 3.05 (Finders' Fees), and Section 3.12 (Title to Purchased Assets) (the "***Seller Fundamental Representations***") shall survive the Closing indefinitely, (b) the representations and warranties of Buyer contained in Section 4.01 (Corporate Existence and Power), Section 4.02 (Corporate Authorization), Section 4.04 (Noncontravention) and Section 4.05 (Finders' Fees) (the "***Buyer Fundamental Representations***") shall survive the Closing indefinitely, (c) the representations and warranties of Seller contained in Section 3.14 (Environmental Matters) shall survive the Closing Date for a period of forty-eight (48) months following the date thereof; and (d) the representations and warranties of Seller contained in Section 3.16 (Taxes) shall survive the Closing for a period of ninety (90) days following the expiration of the applicable statute of limitations (taking into account any extensions or waivers thereof). All covenants and agreements contained in this Agreement that contemplate or provide for any rights, obligations or actions of any Party after the Closing shall survive the Closing until they are fully performed or terminated in accordance with their terms. Any and all claims for Damages arising out of, relating to or in connection with the Excluded Liabilities pursuant to Section 10.02(a)(ii) shall survive the Closing indefinitely. No claim or cause of action for indemnification under ARTICLE 10 arising out of the inaccuracy or breach of any representation or warranty of Seller or Buyer may be made following the termination of the survival period; it being understood that in the event notice of any claim for indemnification under Section 10.02 shall have been given within the applicable survival period, the representations and warranties that are subject of such indemnification claim shall survive until such time as such claim is fully resolved.

Section 10.02      **Indemnification**□

(a)      Seller hereby indemnifies Buyer against and agrees to hold it harmless from any and all Damages incurred or suffered by Buyer arising out of or related to:

(i)      the breach or inaccuracy of any representation or warranty made by Seller in this Agreement; provided, however, for purposes of determining under this Section 10.02(a)(i) whether there is any inaccuracy in, or whether there has been a breach of, any such representation or warranty, and the amount of any Damages associated therewith, the Parties agree (A) that all references to “material,” “materially” or “materiality” (whether or not capitalized) and “Seller Material Adverse Effect” will be disregarded and (B) that the representations and warranties are made for purposes of this Section 10.02(a)(i) as if those disregarded words were not included;

(ii)      the breach or violation of, or default under, any covenant, agreement or undertaking of Seller contained in this Agreement;

(iii)      any Excluded Asset;

(iv)      any Excluded Liability and any and all claims and expenses arising from the failure of Seller to pay, perform or discharge, when due, any of the Excluded Liabilities; and

(v)      any event arising from Seller’s operation and ownership of the Business or any of the Purchased Assets before the Closing (unless specifically included in the Assumed Liabilities or provided for as a liability of Buyer or its Affiliates in one of the Transaction Agreements or other contracts to which both (A) Buyer or its Affiliates and (B) Seller or its Affiliates are bound).

provided that, with respect to indemnification by Seller for any misrepresentation or breach of warranty pursuant to Section 10.02(a)(i), (A) Seller shall not be liable unless the aggregate amount of Damages with respect to such misrepresentations or breaches exceeds \$1,950,000, and then only for Damages in excess of such \$1,950,000 amount, and (B) Seller’s maximum liability for Damages with respect to such misrepresentations or breaches shall not exceed \$39,000,000 in the aggregate; provided, however, that Seller shall remain liable up to one hundred percent (100%) of the Purchase Price (from the first dollar) and the preceding subclause (A) shall not apply for Damages in connection with claims made by Buyer for a breach or inaccuracy in any of the Seller Fundamental Representations.

(b)      Buyer hereby indemnifies Seller against and agrees to hold it harmless from any and all Damages incurred or suffered by Seller arising out of or related to:

(i)      the breach or inaccuracy of any representation or warranty made by Buyer in this Agreement; provided, however, for purposes of determining under this Section 10.02(b)(i) whether there is any inaccuracy in, or whether there has been a breach of, any such representation or warranty, and the amount of any Damages associated therewith, the Parties agree (A) that all references to “material,” “materially” or “materiality” (whether or not capitalized) and “Buyer Material Adverse Effect” will be

disregarded and (B) that the representations and warranties are made for purposes of this Section 10.02(b)(i) as if those disregarded words were not included;

(ii) the breach or violation of, or default under, any covenant, agreement or undertaking of Buyer contained in this Agreement;

(iii) any Assumed Liability and any and all claims and expenses arising from the failure of Buyer to pay, perform or discharge, when due, any of the Assumed Liabilities; and

(iv) any event arising from the operation and ownership of, or conditions first occurring with respect to, the Business (excluding the Excluded Assets) or any of the Purchased Assets after 12:01 a.m. on the Closing Date, except to the extent that such Damages are caused by any pre-Closing act or omission that gives rise to or results in a breach or inaccuracy of any representation or warranty made by Seller for which a claim for indemnification is not precluded by the survival limitations set forth in Section 10.01 of this Agreement;

provided that, with respect to indemnification by Buyer for any misrepresentation or breach of warranty pursuant to Section 10.02(b)(i), (A) Buyer shall not be liable unless the aggregate amount of Damages with respect to such misrepresentations or breaches exceeds \$1,950,000 and then only for Damages in excess of such \$1,950,000 amount, and (B) Buyer's maximum liability for Damages with respect to such misrepresentations or breaches shall not exceed \$39,000,000 in the aggregate; provided, however, that Buyer shall remain liable up to one hundred percent (100%) of the Purchase Price (from the first dollar) for Damages in connection with claims made by Seller for a breach or inaccuracy in any Buyer Fundamental Representations.

#### Section 10.03      **Procedures**□

(a) A party making a claim for indemnification under Section 10.02 shall be, for the purposes of this Agreement referred to as an "**Indemnified Party**" and a party against whom such claims are asserted under Section 10.02 shall be, for the purposes of this Agreement, referred to as an "**Indemnifying Party**". All claims by any Indemnified Party under Section 10.02 shall be asserted and resolved as follows:

(b) In the event that (i) any action, application, suit, demand, claim or legal, administrative, arbitration or other alternative dispute resolution proceeding, hearing or investigation (each a "**Proceeding**") is asserted or instituted by any Person other than the Parties which could give rise to Damages for which an Indemnifying Party is obligated to indemnify an Indemnified Party under this Agreement (such Proceeding, a "**Third Party Claim**") or (ii) any Indemnified Party under this Agreement shall have a claim to be indemnified by any Indemnifying Party under this Agreement which does not involve a Third Party Claim (such claim, a "**Direct Claim**" and, together with Third Party Claims, "**Indemnification Claims**"), the Indemnified Party shall, promptly after it becomes aware of a Third Party Claim (and in any event, within ten (10) Business Days), or facts supporting a Direct Claim, send to the Indemnifying Party a written notice specifying the nature of such Proceeding, and the amount or estimated amount thereof (which amount or estimated amount shall not be conclusive of the final amount, if any, of such Proceeding) and the section of this Agreement such Third Party Claim or

Direct Claim is being made under (a "*Claim Notice*"), together with copies of all notices and documents (including court papers) served on or received by the Indemnified Party in the case of a Third Party Claim, provided that a delay in notifying the Indemnifying Party shall not relieve the Indemnifying Party of its obligations under Section 10.02 except to the extent that (and only to the extent that) the Indemnifying Party shall have been actually prejudiced by such failure to give such notice, in which case the Indemnifying Party shall be relieved of its obligations under Section 10.02 to the extent of such prejudice.

(c) In the event of a Third Party Claim, the Indemnifying Party shall have the right to participate in, or by giving written notice to the Indemnified Party, to assume the defense of any Third Party Claim at the Indemnifying Party's sole expense and by the Indemnifying Party's own counsel, provided such counsel is reasonably acceptable to the Indemnified Party. In the event that the Indemnifying Party assumes the defense of any Third Party Claim, it shall, subject to Section 10.03(d), have the right to take such action as it deems necessary to avoid, dispute, defend, appeal or make counterclaims pertaining to any such Third Party Claim in the name and on behalf of the Indemnified Party. The Indemnified Party shall have the right, at its own cost and expense, to participate in the defense of any Third Party Claim with counsel selected by it subject to the Indemnifying Party's right to control the defense thereof. If the Indemnifying Party elects or fails to promptly notify the Indemnified Party in writing of its election to defend such Third Party Claim as provided in this Agreement, the Indemnified Party may, subject to Section 10.03(d), pay, settle or defend such Third Party Claim and seek indemnification for any and all Damages based upon, arising from or relating to such Third Party Claim. The Parties shall cooperate with each other in all reasonable respects in connection with the defense of any Third Party Claim, including making available records relating to such Third Party Claim and furnishing, without expense (other than reimbursement of actual out-of-pocket expenses) to the defending party, management employees of the non-defending party as may be reasonably necessary for the preparation of the defense of such Third Party Claim

(d) Notwithstanding any other provision of this Agreement, the Indemnifying Party shall not enter into a settlement of any Third Party Claim without the prior written consent of the Indemnified Party (which consent shall not be unreasonably withheld, conditioned or delayed), except as provided in this Section 10.03(d). If a firm offer is made to settle a Third Party Claim without leading to Liability or the creation of a financial or other obligation, contingent or otherwise, on the part of the Indemnified Party and provides, in customary form, for the unconditional release of each Indemnified Party from all Liabilities and obligations in connection with such Third Party Claim and the Indemnifying Party desires to accept and agree to such offer, the Indemnifying Party shall give written notice to that effect to the Indemnified Party. If the Indemnified Party fails to consent to such firm offer within ten (10) days after its receipt of such notice, the Indemnifying Party may continue to contest or defend such Third Party Claim and in such event, the maximum Liability of the Indemnifying Party as to such Third Party Claim shall not exceed the amount of such settlement offer. If the Indemnified Party fails to consent to such firm offer and also fails to assume defense of such Third Party Claim, the Indemnifying Party may settle the Third Party Claim upon the terms set forth in such firm offer to settle such Third Party Claim provided that the sole relief in such offer or settlement is monetary damages that are paid in full by the Indemnifying Party and no admission of responsibility by the Indemnified Party is required. If the Indemnified Party has assumed the defense pursuant to Section 10.03(c), it shall not agree to any settlement without the written consent of the Indemnifying Party (which consent shall not be unreasonably withheld, conditioned or delayed).



(e) In the event of Direct Claim, the Indemnifying Party shall notify the Indemnified Party within fifteen (15) days of receipt of a Claim Notice whether or not the Indemnifying Party disputes such Indemnification Claim. From and after the delivery of a Claim Notice under this Agreement, at the reasonable request of the Indemnifying Party, each Indemnified Party shall grant the Indemnifying Party and its representatives reasonable access to the books, records, employees, representatives and properties of such Indemnified Party, and in the case of a claim relating to environmental matters, copies of sampling data, environmental reports, proposals and any other non-privileged correspondence in the possession of the Indemnified Party to the extent reasonably related to the matters to which the Claim Notice relates. All such access shall be granted during normal business hours and shall be granted under conditions which will not unreasonably interfere with the business and operations of such Indemnified Party. The Indemnifying Party will not, and shall use its commercially reasonable efforts to cause its representatives not to, use (except in connection with such Claim Notice) or disclose to any third Person other than the Indemnifying Party's representatives (except as may be required by applicable Law) any information obtained pursuant to this Section 10.03(e) which is designated as confidential by the Indemnified Party.

#### Section 10.04      **Calculation of Damages**

(a) The amount of any Damages payable under this ARTICLE 10 by the Indemnifying Party shall be net of any (i) amounts recovered by the Indemnified Party under applicable insurance policies and (ii) net Tax benefit realized by the Indemnified Party arising from the incurrence or payment of any such Damages and the receipt of indemnification payments from or on behalf of the Indemnifying Party. In computing the amount of any such Tax benefit, the Indemnified Party shall be deemed to fully utilize, at the highest marginal Tax rate then in effect, all Tax items arising from the receipt of any indemnity payment hereunder or the incurrence or payment of any indemnified Damages.

(b) The Indemnifying Party shall not be liable under Section 10.01 for any (i) indirect, consequential, punitive or exemplary Damages or (ii) Damages for lost profits. For purposes of clarity, the payment of Damages to a Person making a Third Party Claim in satisfaction of such Third Party Claim shall not be deemed consequential Damages.

Section 10.05      **Assignment of Claims** If the Indemnified Party receives any payment from an Indemnifying Party in respect of any Damages pursuant to Section 10.01 and the Indemnified Party could have recovered all or a part of such Damages from a third party (a "**Potential Contributor**") based on the underlying claim asserted against the Indemnifying Party, the Indemnified Party shall assign such of its rights to proceed against the Potential Contributor as are necessary to permit the Indemnifying Party to seek to recover from the Potential Contributor the amount of such payment.

Section 10.06      **Exclusive Remedy; Mitigation** Except as specifically set forth in this Agreement, each Party waives any rights and claims it may have against the other Party, whether in law or in equity, relating to the Purchased Assets or the transactions contemplated hereby. The rights and claims waived by each Party include claims for contribution or other rights of recovery arising out of or relating to claims for breach of contract, breach of representation or warranty, negligent misrepresentation and all other claims for breach of duty. After the Closing, ARTICLE 10, ARTICLE 8 and Section 5.09 will provide the

exclusive remedy for any misrepresentation, breach of warranty, covenant or other agreement or other claim arising out of this Agreement or the transactions contemplated hereby. Notwithstanding the foregoing, Buyer and Seller agree that each Party shall retain all remedies at Law or in equity with respect to actual fraud or willful or intentional breaches of a material representation, warranty, covenant or agreement contained in this Agreement. Each of Buyer and Seller has an obligation to use commercially reasonable efforts to mitigate Damages subject to indemnification pursuant to this ARTICLE 10.

## ARTICLE 11

### TERMINATION

Section 11.01 **Grounds for Termination**□ This Agreement may be terminated at any time prior to the Closing:

- (a) by mutual written agreement of Seller and Buyer;
- (b) by either Buyer or Seller (i) if the Closing has not occurred on or before September 6, 2017 (the “**End Date**”); provided that, the End Date shall be extended an additional sixty (60) days upon written notice by either Buyer or Seller to the other Party if the receipt of the FERC Approval or the approval of the Public Service Commission of West Virginia are the only conditions to Closing that have not been satisfied or waived by the End Date, and (ii) the terminating Party shall not have breached in any material respect any of its obligations under this Agreement in any manner that shall have proximately caused the failure of a closing condition to be satisfied pursuant to ARTICLE 9;
- (c) by either Buyer or Seller if (i) a statute, rule, regulation or executive order shall have been enacted, entered or promulgated prohibiting the consummation of the Transactions or (ii) an Order shall have been entered permanently restraining, enjoining or otherwise prohibiting the consummation of the Transactions, and such Order shall have become final and non-appealable and the party seeking to terminate this Agreement pursuant to this Section 11.01(c)(ii) shall have used commercially reasonable efforts to remove such order, decree, ruling or injunction;
- (d) by Buyer, so long as Buyer is not then in Material breach of any of its representations, warranties, covenants or agreements hereunder, by written notice to Seller, if there shall have been a Material breach of any representation or warranty of Seller, or a Material breach of any covenant or agreement of Seller hereunder, which breach would be reasonably expected to have, individually or in the aggregate, a Seller Material Adverse Effect, and such breach shall not have been remedied within thirty (30) days after receipt by Seller of notice in writing (a “**Breach Notice**”) from Buyer, specifying the nature of such breach and requesting that it be remedied or Buyer shall not have received adequate assurance of a cure of such breach within such thirty (30) day period (or which breach cannot by its nature be so cured); provided, however, that such thirty (30) day period shall, if such condition is capable of being cured, be extended for up to an additional thirty (30) days as long as Seller is undertaking commercially reasonable efforts to cure such breach in good faith; or

(e) by Seller, so long as Seller is not then in Material breach of any of its representations and warranties, covenants or agreements hereunder, by written notice to Buyer, if there shall have been a Material breach of any representation or warranty of Buyer, or a Material breach of any covenant or agreement of Seller hereunder, which breach would be reasonably expected to have, individually or in the aggregate, a Buyer Material Adverse Effect, and such breach shall not have been remedied within thirty (30) days after receipt by Buyer of Breach Notice, specifying the nature of such breach and requesting that it be remedied or Seller shall not have received adequate assurance of a cure of such breach within such 30 day period (or which breach cannot by its nature be so cured); provided, however, that such thirty (30) day period shall, if such condition is capable of being cured, be extended for up to an additional thirty (30) days as long as Buyer is undertaking commercially reasonable efforts to cure such breach in good faith.

(f) (i) by Buyer if any of the conditions set forth in Section 9.01 or Section 9.02 have not been satisfied as of the Closing Date or if the satisfaction of such a condition is or becomes impossible (other than through the failure by Buyer to comply with its obligations under this Agreement) and Buyer has not waived such condition on or before the Closing Date; or (ii) by Seller, if any of the conditions set forth in Section 9.01 or Section 9.03 have not been satisfied as of the Closing Date or if the satisfaction of such a condition is or becomes impossible (other than through the failure of Seller to comply with its obligations under this Agreement) and Seller has not waived such condition on or before the Closing Date.

(g) by Buyer due to an uncured Buyer Objection pursuant to the terms and conditions of Section 5.07.

(h) by either Buyer or Seller pursuant to the terms and conditions of Section 5.04 (Casualty) and Section 5.05 (Condemnation).

The Party desiring to terminate this Agreement pursuant to Section 11.01(d) or (e) shall give five (5) Business Days written notice of such termination to the other Party.

**Section 11.02 Effect of Termination** ☐ If this Agreement is terminated as permitted by Section 11.01, such termination shall be without liability of either Party (or any stockholder, Affiliate, director, officer, employee, agent, consultant or representative of such Party) to the other Party to this Agreement; provided that if such termination shall result from the (a) willful failure of either Party to fulfill a condition to the performance of the obligations of the other Party, or (b) willful failure to perform a material covenant of this Agreement, such Party shall be fully liable for any and all Damages incurred or suffered by the other Party as a result of such failure or breach.

## ARTICLE 12

### MISCELLANEOUS

**Section 12.01 Notices** ☐ Any notice or other communication from any Party to the other Party shall be made in writing in the English language and shall be (a) delivered by hand or sent by a nationally or internationally recognized courier to the address of the Party set forth below or (b) sent by facsimile to the facsimile number of the Party set forth below and shall be marked for the attention of the person therein referred to. All notices and

communications shall be deemed received upon: (a) actual receipt thereof by the addressee or actual delivery thereof to the appropriate address; or (b) in the case of a facsimile transmission, upon transmission thereof by the sender and the issuance by the transmitting machine of a confirmation slip confirming that the number of pages constituting the notice have been transmitted without error:

if to Buyer, to:

Monongahela Power Company  
5001 NASA Boulevard  
Fairmont, WV 26554  
Attn: Director, Regulated Generation & Dispatch  
Fax: 234-678-2564

with a copy to (such copy not to constitute notice):

c/o FirstEnergy Service Company  
76 S. Main Street  
Akron, OH 44308  
Attn: General Counsel  
Fax: 330-384-3875

if to Seller, to:

Allegheny Energy Supply Company, LLC  
76 S. Main Street  
Akron, OH 44076  
Attention: President  
Fax: 330-384-3875

with a copy to (such copy not to constitute notice):

Allegheny Energy Supply Company, LLC  
76 South Main Street  
Akron, OH 44308  
Attn: Vice President and General Counsel  
Tel: 330-384-5800  
Fax: 330-384-3875

#### Section 12.02      **Amendments and Waivers** ☐

(a) Any provision of this Agreement or of any other Transaction Agreement may be amended or waived if, but only if, such amendment or waiver is in writing and is signed, in the case of an amendment, by each Party to this Agreement or such other Transaction Agreement, as the case may be, or in the case of a waiver, by the Party against whom the waiver is to be effective.

(b) No failure or delay by any Party in exercising any right, power or privilege hereunder or under any of the other Transaction Agreements shall operate as a waiver thereof nor

shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided or provided in any of the other Transaction Agreements shall be cumulative and not exclusive of any rights or remedies provided by Law.

**Section 12.03 Expenses** Except as otherwise provided herein, all costs and expenses incurred in connection with negotiating, preparing and executing the Transaction Agreements shall be paid by the Party incurring such cost or expense. Notwithstanding the previous sentence, the Parties shall split equally any fees and expenses (including attorneys' fees) incurred pursuant to the Parties' joint application to FERC under Section 203 of the Federal Power Act.

**Section 12.04 Successors and Assigns** The provisions of the Transaction Agreements shall be binding upon and inure to the benefit of the parties hereto and thereto and their respective successors and assigns; provided that no party may assign, delegate or otherwise transfer any of its rights or obligations under this Agreement or under any of the other Transaction Agreements without the consent of each other Party hereto and thereto.

**Section 12.05 Governing Law** THIS AGREEMENT SHALL BE CONSTRUED, PERFORMED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, WITHOUT GIVING EFFECT TO ITS PRINCIPLES OR RULES OF CONFLICT OF LAWS OTHER THAN SECTION 5-1401 OF THE NEW YORK GENERAL OBLIGATIONS LAW.

**Section 12.06 Jurisdiction** Except as otherwise expressly provided in this Agreement or any of the other Transaction Agreements, the Parties hereto agree that any suit, action or proceeding seeking to enforce any provision of, or based on any matter arising out of or in connection with, this Agreement, the other Transaction Agreements or the Transactions shall be brought in a federal court located in the Southern District of the State of New York and that any cause of action arising out of this Agreement or any of the other Transaction Agreements shall be deemed to have arisen from a transaction of business in the State of New York, and each of the Parties hereby irrevocably consents to the nonexclusive jurisdiction of such courts (and of the appropriate appellate courts therefrom) in any such suit, action or proceeding and irrevocably waives, to the fullest extent permitted by Law, any objection that it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in any such court or that any such suit, action or proceeding which is brought in any such court has been brought in an inconvenient forum. Process in any such suit, action or proceeding may be served on any Party anywhere in the world, whether within or without the jurisdiction of any such court.

**Section 12.07 WAIVER OF JURY TRIAL** EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATED TO THIS AGREEMENT, THE OTHER TRANSACTION AGREEMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY.

**Section 12.08 Counterparts; Third Party Beneficiaries** This Agreement and the other Transaction Agreements may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures hereto and thereto

were upon the same instrument. This Agreement and the other Transaction Agreements shall become effective when each Party hereto or thereto shall have received a counterpart hereof or thereof signed by the other Party hereto or thereto. Except as explicitly provided herein or therein, no provision of this Agreement or of any of the other Transaction Agreements is intended to confer upon any Person other than the Parties hereto or thereto any rights or remedies hereunder or thereunder.

**Section 12.09 Entire Agreement**□This Agreement and the other Transaction Agreements constitute the entire agreement between the Parties with respect to the subject matter of this Agreement and supersede all prior agreements and understandings, both oral and written, between the Parties with respect to the subject matter of this Agreement, except for the Confidentiality Agreement, which remains in full force and effect in accordance with its terms and which applies to this Agreement, the Transaction Agreements and the Transactions.

**Section 12.10 Captions**□The captions herein and in the other Transaction Agreements are included for convenience of reference only and shall be ignored in the construction or interpretation hereof or thereof.

**Section 12.11 Severability**□The provisions of this Agreement will be deemed severable and the invalidity or unenforceability of any provision will not affect the validity or enforceability of the other provisions hereof; provided that if any provision of this Agreement, as applied to any Party or to any circumstance, is adjudged by a Governmental Body or arbitrator not to be enforceable in accordance with its terms, the Parties agree that such Governmental Body or arbitrator making such determination will have the power to modify the provision in a manner consistent with its objectives such that it is enforceable, or to delete specific words or phrases, and in its reduced form, such provision will then be enforceable and will be enforced.

**Section 12.12 Specific Performance**□Each Party acknowledges and agrees that the other Party would be damaged irreparably if any provision of this Agreement is not performed in accordance with its specific terms or is otherwise breached. Accordingly, each Party agrees that the other Party will be entitled to an injunction or injunctions to prevent breaches of the provisions of this Agreement and to enforce specifically this Agreement and its terms and provisions in any action instituted in any court of the United States or any state thereof having jurisdiction over the Party and the matter, subject to Section 12.05, Section 12.06 and Section 12.07, in addition to any other remedy to which it may be entitled, at law or in equity.

*[Signature Page Follows]*

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed by their respective authorized officers as of the day and year first above written.

Allegheny Energy Supply Company, LLC

By: Steven R. Staub  
Name: Steven R. Staub  
Title: VP & Treasurer

Monongahela Power Company

By: \_\_\_\_\_  
Name:  
Title:

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed by their respective authorized officers as of the day and year first above written.

Allegheny Energy Supply Company, LLC

By: \_\_\_\_\_  
Name:  
Title:

Monongahela Power Company

By: Holly C. Kauffman  
Name: Holly C. Kauffman  
Title: Vice President

*[Signature Page to Asset Purchase Agreement]*



Form of Assignment and Assumption Agreement

ASSIGNMENT AND ASSUMPTION AGREEMENT

This Assignment and Assumption Agreement, dated as of [•], 2017 (this “Agreement”), is by and among Allegheny Energy Supply Company, LLC, a Delaware limited liability company (“Assignor”) and Monongahela Power Company, an Ohio corporation (“Assignee” and, together with Assignor, the “Parties”).

RECITALS

A. Assignor and Assignee are parties to that certain Asset Purchase Agreement dated as of [•], 2017 (the “Asset Purchase Agreement”), pursuant to which Assignee has agreed to purchase the Purchased Assets and assume the Assumed Liabilities pursuant to the terms of the Asset Purchase Agreement, including Section 2.03 thereof; and

B. In accordance with the terms of the Asset Purchase Agreement, Assignor and Assignee have agreed to enter into this Agreement, providing for (a) Assignor’s sale, conveyance, grant, assignment, transfer and delivery to Assignee of all of Assignor’s right, title and interest in, under and to the Purchased Assets other than Real Property or Tangible Personal Property (collectively, the “Assigned Assets”), (b) Assignee’s acceptance of such sale, conveyance, grant, assignment, transfer and delivery and (c) Assignee’s assumption of all of the Assumed Liabilities, in each case on and subject to the terms of the Asset Purchase Agreement.

AGREEMENT

The Parties, intending to be legally bound, agree as follows:

1. Definitions. Undefined capitalized terms herein are defined in the Asset Purchase Agreement.

2. Assignment. Assignor hereby sells, conveys, grants, assigns, transfers and delivers to Assignee as of the date hereof, all of its right, title and interest in, under and to the Assigned Assets free and clear of all Liens other than Permitted Liens in accordance with and subject to the terms and conditions of the Asset Purchase Agreement, including Section 2.03 thereof.

3. Acceptance and Assumption. Assignee hereby, as of the date hereof, (a) purchases, acquires and accepts the sale, conveyance, grant, assignment, transfer and delivery of Assignor’s right, title and interest in, under and to the Assigned Assets free and clear of all Liens other than Permitted Liens and (b) assumes and agrees to pay, perform and discharge when due, and shall be liable with respect to the Assumed Liabilities in accordance with and subject to the terms and conditions of the Asset Purchase Agreement, including Section 2.03 thereof.

4. Parties in Interest. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and permitted assigns.

5. Terms of Asset Purchase Agreement. The scope, nature, and extent of the Assumed Liabilities are expressly set forth in the Asset Purchase Agreement. Nothing contained herein will itself change, amend, extend, or alter (nor should it be deemed or construed as changing, amending, extending, or altering) the terms or conditions of the Asset Purchase Agreement in any manner whatsoever. This instrument does not create or establish rights, liabilities or obligations not otherwise created or existing under or pursuant to the Asset Purchase Agreement. In the event of any conflict or inconsistency between the terms of the Asset Purchase Agreement and the terms of this Agreement, the terms of the Asset Purchase Agreement will govern.

6. Other Provisions. The provisions of Article 12 of the Asset Purchase Agreement are hereby incorporated into this Agreement, *mutatis mutandis*.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have executed this Agreement on the date first above written.

ALLEGHENY ENERGY SUPPLY COMPANY, LLC

By: \_\_\_\_\_

Name:

Title:

MONONGAHELA POWER COMPANY

By: \_\_\_\_\_

Name:

Title:

*[Signature Page to Assignment and Assumption Agreement]*

Form of Bill of Sale

BILL OF SALE

For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, and subject to the terms and conditions of that certain Asset Purchase Agreement dated as of [●], 2017 (the "Asset Purchase Agreement") by and among Allegheny Energy Supply Company, LLC, a Delaware limited liability company ("Seller") and Monongahela Power Company, an Ohio corporation ("Buyer" and, together with Seller, the "Parties"), Seller hereby unconditionally and irrevocably grants, bargains, transfers, sells, assigns, conveys, and delivers to Buyer, its successors and assigns forever, all of Seller's rights, titles, and interests, in, to and under the Purchased Assets pursuant to this Bill of Sale, dated as of [●], 2017 (this "Bill of Sale") and subject to the terms of the Asset Purchase Agreement, including Section 2.01 thereof, free and clear of all Liens other than Permitted Liens,

TO HAVE AND TO HOLD the Purchased Assets with all appurtenances thereto.

- A. Undefined capitalized terms herein are defined in the Asset Purchase Agreement.
- B. Notwithstanding anything to the contrary contained herein, none of the Excluded Assets shall be included in the Purchased Assets.
- C. This Bill of Sale shall inure to the benefit of and be binding upon the Parties and their respective successors and assigns.
- D. This Bill of Sale is being executed solely pursuant to the Asset Purchase Agreement to give effect to the transactions contemplated by the Asset Purchase Agreement. Nothing in this Bill of Sale, express or implied, is intended to or shall be construed to modify, expand or limit in any way the terms of the Asset Purchase Agreement. To the extent that any provisions of this Bill of Sale conflicts or is inconsistent with the terms of the Asset Purchase Agreement, the terms of the Asset Purchase Agreement shall govern.
- E. Nothing in this Bill of Sale, express or implied, is intended or shall be construed to confer upon or give to, any person, firm or corporation other than Buyer and its successors and assigns any remedy or claim under or by reason of this instrument or any term, covenant or condition hereof, and all of the terms, covenants, conditions, promises and agreements in this instrument shall be for the sole and exclusive benefit of Buyer and its successors and assigns.
- F. At any time or from time to time, at Buyer's request and without further consideration (but without any requirement that Seller expends any out of pocket funds), Seller shall execute and deliver to Buyer such other instruments of sale, transfer, conveyance, assignment and confirmation, provide such materials and information and take such other actions

as Buyer may reasonably deem necessary or desirable in order more effectively to transfer, convey and assign the Purchased Assets to Buyer.

G. The provisions of Article 12 of the Asset Purchase Agreement are hereby incorporated into this Bill of Sale, *mutatis mutandis*.

[Signature Page Follows]

IN WITNESS WHEREOF, this Bill of Sale is being executed and delivered by Seller as of the date first written above.

ALLEGHENY ENERGY SUPPLY COMPANY, LLC

By: \_\_\_\_\_

Name:

Title:

*[Signature Page to Bill of Sale]*

Form of Deed

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED ("Deed"), made this \_\_\_\_ day of [●], 2017, by and between ALLEGHENY ENERGY SUPPLY COMPANY, LLC, a Delaware limited liability company, with a mailing address of 800 Cabin Hill Drive, Greensburg, Pennsylvania 15601 ("Grantor"), and MONONGAHELA POWER COMPANY, an Ohio corporation, with a mailing address of \_\_\_\_\_ ("Grantee"),

*WITNESSETH:*

That for and in consideration of the sum of Ten Dollars (\$10.00), cash in hand paid by Grantee to Grantor, and for other good and valuable consideration, the receipt and sufficiency of all of which are hereby acknowledged, Grantor does hereby grant and convey unto Grantee and to its successors and assigns, with covenants of special warranty, subject to the hereinafter described exceptions, covenants and conditions, all rights, title and interests of Grantor in and to the following real property (collectively, the "Property"):

ALL THOSE CERTAIN PIECES, PARCELS OR TRACTS OF LAND, lying and being situate in the Grant District of Pleasants County, West Virginia, identified, bounded and described as set forth on Exhibit A attached hereto and incorporated herein by reference,

TOGETHER WITH all buildings and improvements thereon and all rights, ways, privileges, waters, easements, and appurtenances thereunto appertaining,

TOGETHER WITH the easements, rights, benefits, appurtenances, privileges, and hereditaments appertaining thereto, as described on Exhibit B attached hereto and incorporated herein by reference;

EXCEPTING AND RESERVING therefrom all of the real property and improvements to real property described on Exhibit C attached hereto and incorporated herein by reference.

AND BEING the same property conveyed to Grantor by the following instruments:

\_\_\_\_\_.

THE FOREGOING GRANT AND CONVEYANCE IS MADE UNDER AND SUBJECT to the matters set forth on Exhibit D attached hereto and incorporated herein by reference (the "Permitted Exceptions").

TO HAVE AND TO HOLD the same under and for the use of Grantee, its successors and assigns, forever.

The real estate herein conveyed is mapped for taxation purposes by the Assessor of Pleasants County, West Virginia, in the Grant District of Pleasants County, as set forth on Exhibit E attached hereto and incorporated herein by reference.

### **DECLARATION OF RESIDENCY**

Under penalty of perjury, Grantor further declares it is a limited liability company formed under the laws of the State of Delaware and registered with the West Virginia Tax Commissioner to do business in the State of West Virginia and is exempt from the withholding tax requirements for the sale of real estate in the State of West Virginia pursuant to W. Va. Code §11-21-71b, and intends this declaration to satisfy the requirements thereof.

### **DECLARATION OF CONSIDERATION OR VALUE**

In compliance with Chapter 11, Article 22, of the West Virginia Code, this deed conveys real estate located in Pleasants County, West Virginia, and Grantor declares that the total consideration for, or actual cash value of, all the real estate located in West Virginia conveyed by this document is \_\_\_\_\_.

[Signature Page Follows]



WITNESS the following signatures:

ALLEGHENY ENERGY SUPPLY COMPANY, LLC  
a Delaware limited liability company,

By: \_\_\_\_\_

[NAME]

Its: [TITLE]

STATE OF OHIO )

) SS.

COUNTY OF SUMMIT )

The foregoing instrument was acknowledged and signed before me this \_\_\_\_ day of \_\_\_\_\_, 2017, by \_\_\_\_\_, the \_\_\_\_\_ of Allegheny Energy Supply Company, LLC, a Delaware limited liability company, on behalf of said limited liability company as the official act thereof, by exercise of authority duly given.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

This instrument prepared by:

After recordation return to:

Exhibit A to Special Warranty Deed – Legal Description

[TO BE ATTACHED]

---

Exhibit B to Special Warranty Deed – Easements and Rights Appurtenant

[TO BE ATTACHED]

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Exhibit C to Special Warranty Deed – Excepted Property

1. [INSERT REFERENCE TO PROPERTY/FACILITIES EXCEPTED FROM PRIOR DEEDS OF RECORD]
- 

Exhibit D to Special Warranty Deed – Permitted Exceptions

1. Zoning ordinances, if any
2. Real estate taxes and assessments, both general and special, which are lien not yet due and payable.
3. [Coal and mining rights and all rights and privileges incident to the mining of coal heretofore conveyed, excepted or reserved by instruments of record; the right of surface, lateral or subjacent support; or any surface subsidence.]
4. Those reservations made in that certain [Deed] dated [ ] and recorded among the land records of [city/county/state] at [page/liber/folio].
5. [TO BE PROVIDED]

Form of Seller's Certificate (Resolutions)

**Allegheny Energy Supply Company, LLC**

**CERTIFICATE**

This Certificate (this "Certificate") is delivered pursuant to Section 2.10(a)(vii) of the Asset Purchase Agreement, dated as of March [●], 2017 (the "Purchase Agreement"), between Allegheny Energy Supply Company, LLC, a Delaware limited liability company, as seller (the "Company") and Monongahela Power Company, an Ohio corporation, as buyer. All capitalized terms used herein but not defined herein are used as defined in the Purchase Agreement. The undersigned, being the duly appointed and acting \_\_\_\_\_ Secretary of the Company, hereby certifies, in such capacity and not in an individual capacity, as follows:

Attached hereto as Exhibit A is a complete and correct copy of the resolutions duly adopted by the Board of Directors of the Company on or prior to the date hereof approving and authorizing the execution and delivery of the Purchase Agreement and all instruments and agreements to be executed and delivered by the Company in connection therewith to which the Company is a party. Such resolutions have not been repealed or amended and are in full force and effect.

\_\_\_\_\_  
Name:

Title:

Dated \_\_\_\_\_

\*\*\*\*\*

• **EXHIBIT A**

**Resolutions**

[TO BE ATTACHED]

Form of Seller's Certificate (Incumbency)

**Allegheny Energy Supply Company, LLC**

**CERTIFICATE**

This Certificate (this "Certificate") is delivered pursuant to Section 2.10(a)(viii) of the Asset Purchase Agreement, dated as of March [●], 2017 (the "Purchase Agreement"), between Allegheny Energy Supply Company, LLC, a Delaware limited liability company, as seller (the "Company") and Monongahela Power Company, an Ohio corporation, as buyer. All capitalized terms used herein but not defined herein are used as defined in the Purchase Agreement. The undersigned, being the duly appointed and acting \_\_\_\_\_ Secretary of the Company, hereby certifies, in such capacity and not in an individual capacity, as follows:

Attached as **Exhibit A** is the list of duly elected, qualified and acting officers of the Company who are incumbents as of the date hereof and who are authorized to sign the Purchase Agreement [and the other documents to be delivered under the Purchase Agreement,] and I do further certify that the signatures set above their names are true specimens of the signatures of such officers, respectively.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned has executed this Certificate as of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Name:  
Title: \_\_\_\_\_ Secretary

The undersigned, being the duly appointed \_\_\_\_\_ of the Company hereby certifies that \_\_\_\_\_ is the duly appointed \_\_\_\_\_ Secretary of the Company, that he is designated and authorized to execute this Certificate, and that his signature set forth above is his true and genuine signature.

IN WITNESS WHEREOF, the undersigned has executed this Certificate as of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Name:  
Title:

\*\*\*\*\*

**EXHIBIT A**

**Incumbency**

[TO BE ATTACHED]

Form of Buyer's Certificate (Resolutions)

**Monongahela Power Company**

**CERTIFICATE**

This Certificate (this "Certificate") is delivered pursuant to Section 2.10(b)(iv) of the Asset Purchase Agreement, dated as of March [●], 2017 (the "Purchase Agreement"), between Allegheny Energy Supply Company, LLC, a Delaware limited liability company, as seller and Monongahela Power Company, an Ohio corporation, as buyer (the "Company"). All capitalized terms used herein but not defined herein are used as defined in the Purchase Agreement. The undersigned, being the duly appointed and acting \_\_\_\_\_ Secretary of the Company, hereby certifies, in such capacity and not in an individual capacity, as follows:

Attached hereto as Exhibit A is a complete and correct copy of the resolutions duly adopted by the Board of Directors of the Company on or prior to the date hereof approving and authorizing the execution and delivery of the Purchase Agreement and all instruments and agreements to be executed and delivered by the Company in connection therewith to which the Company is a party. Such resolutions have not been repealed or amended and are in full force and effect.

\_\_\_\_\_  
Name:

Title:

Dated \_\_\_\_\_

\*\*\*\*\*

**EXHIBIT A**

**Resolutions**

[TO BE ATTACHED]

Form of Buyer's Certificate (Incumbency)

**Monongahela Power Company**

**CERTIFICATE**

This Certificate (this "Certificate") is delivered pursuant to Section 2.10(b)(v) of the Asset Purchase Agreement, dated as of March [●], 2017 (the "Purchase Agreement"), between Allegheny Energy Supply Company, LLC, a Delaware limited liability company, as seller and Monongahela Power Company, an Ohio corporation, as buyer (the "Company"). All capitalized terms used herein but not defined herein are used as defined in the Purchase Agreement. The undersigned, being the duly appointed and acting \_\_\_\_\_ Secretary of the Company, hereby certifies, in such capacity and not in an individual capacity, as follows:

Attached as Exhibit A is the list of duly elected, qualified and acting officers of the Company who are incumbents as of the date hereof and who are authorized to sign the Purchase Agreement [and the other documents to be delivered under the Purchase Agreement,] and I do further certify that the signatures set above their names are true specimens of the signatures of such officers, respectively.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned has executed this Certificate as of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Name:  
Title: \_\_\_\_\_ Secretary

The undersigned, being the duly appointed \_\_\_\_\_ of the Company hereby certifies that \_\_\_\_\_ is the duly appointed \_\_\_\_\_ Secretary of the Company, that he is designated and authorized to execute this Certificate, and that his signature set forth above is his true and genuine signature.

IN WITNESS WHEREOF, the undersigned has executed this Certificate as of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Name:  
Title:

\*\*\*\*\*

**EXHIBIT A**

**Incumbency**

[TO BE ATTACHED]



**FORM OF**  
**ASSUMPTION AND INDEMNITY AGREEMENT**

Between

**ALLEGHENY ENERGY SUPPLY COMPANY, LLC,**  
as "*Issuer*"

**MONONGAHELA POWER COMPANY,**  
as "*Indemnitor*"

and

**THE HOLDER (AS DEFINED HEREIN)**

Date: As of [\_\_\_\_\_] [\_\_\_\_], 2017

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### **ARTICLE I**

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EXHIBIT A Copy of Note

EXHIBIT B Form of Sixth Supplement to the Security Agreements

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**ASSUMPTION AND INDEMNITY AGREEMENT**, dated as of [\_\_\_\_\_] [\_\_\_\_], 2017 (this "**Agreement**"), by and among ALLEGHENY ENERGY SUPPLY COMPANY, LLC, a Delaware limited liability company (the "**Issuer**"), MONONGAHELA POWER COMPANY, an Ohio corporation (the "**Indemnitor**"), and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as successor Trustee (the "**Trustee**") under that certain Trust Indenture, dated as of November 1, 1977 (the "**Original Indenture**"), as supplemented by a First Supplemental Indenture, dated as of November 1, 1977, a Second Supplemental Indenture, dated as of May 15, 1995, a Third Supplemental Indenture, dated as of February 1, 1998, a Fourth Supplemental Indenture, dated as of April 1, 1999 and a Fifth Supplemental Indenture, dated as of October 15, 2007 (the "**Original Indenture**", as so supplemented, the "**Indenture**"), with Pleasants County, West Virginia (the "**County**"), acting by and through The County Commission of Pleasants County.

**W I T N E S S E T H:**

**WHEREAS**, pursuant to a Pollution Control Financing Agreement, dated as of November 1, 1977, as amended and supplemented by a First Supplement thereto, dated as of October 15, 2007, among the Issuer (as successor in interest to The Potomac Edison Company ("**Potomac Edison**") and West Penn Power Company ("**West Penn**")), the Indemnitor and the County (as so amended and supplemented, the "**Financing Agreement**"), the Issuer has executed and delivered to the Trustee, as the Holder (as defined herein), its Pollution Control Note (Pleasants County, West Virginia), 2007 Series F, dated October 15, 2007, in the principal amount of \$142,000,000 (the "**Note**"); and

**WHEREAS**, the Note, a copy of which is attached hereto as Exhibit A, is secured by a lien on certain pollution control facilities (the "**Facilities**") at the Pleasants Power Station located in Pleasants County, West Virginia (the "**Pleasants Station**") pursuant to those certain Deeds of Trust and Security Agreements referenced on Schedule I hereto (the "**Security Agreements**"); and

**WHEREAS**, the Issuer owns a 100% ownership interest in the Pleasants Station; and

**WHEREAS**, the Indemnitor is an electric utility engaged in the business of the production, transmission and distribution of electric energy; and

**WHEREAS**, the Issuer desires to convey and transfer to the Indemnitor all of its right, title and interest in and to its ownership interest in the Pleasants Station, including its ownership interest in the Facilities constituting the Mortgaged Facilities and the Mortgaged Site (as defined in the Security Agreements) (the "**Transferred Assets**"); and

**WHEREAS**, in connection with such conveyance and transfer, Section 3.02(A)(c) of each of the Security Agreements contemplates that the Indemnitor's interest in the Transferred Assets must be substituted directly or indirectly for the Issuer's interest in the Transferred Assets under and subject to the lien of such Security Agreement free and clear of all other liens, except as otherwise permitted thereby; and

**WHEREAS**, the Indemnitor has agreed that the Indemnitor's interest in the Transferred Assets shall be substituted directly for the Issuer's interest in the Transferred Assets under and subject to the lien of each of the Security Agreements, free and clear of all other liens except the

First Mortgage (as defined herein), the lien of which is subordinated to the lien of each of the Security Agreements; and

**WHEREAS**, Section 6.01 of each of the Security Agreements contemplates that the Indemnitor shall assume the due and punctual performance of the Note in connection with such conveyance and transfer; and

**WHEREAS**, the Indemnitor has agreed to irrevocably and unconditionally assume (i) the rights and obligations of the Issuer under or pursuant to each of the Security Agreements with respect to the Transferred Assets and (ii) the due and punctual performance of the Note, including without limitation the payment of all amounts due from time to time by the Issuer to the Holder in respect thereof.

**NOW THIS ASSUMPTION AND INDEMNITY AGREEMENT WITNESSES** as follows:

## ARTICLE I

### DEFINITIONS

Section 1.1 Definitions. As used herein, the following terms have the following meanings:

**“Agreement”** shall mean this Assumption and Indemnity Agreement as duly amended or supplemented from time to time.

**“First Mortgage”** shall mean that certain Trust Indenture, dated as of August 1, 1945, between the Indemnitor, as issuer, and Citibank, N.A., as trustee (as successor to City Bank Farmers Trust Company), as heretofore amended and supplemented and as it may hereafter be further amended and supplemented.

**“Holder”** shall mean, in relation to the Note, the Person who from time to time is the holder of the Note.

**“Person”** means any individual, company, corporation, limited liability company, firm, partnership, joint venture, association, organization, state or agency of a state or other entity, whether or not having separate legal personality.

**“Transferred Assets”** shall have the meaning ascribed to it in the recitals hereto.

Section 1.2 Sections. Any reference in this Agreement to a Section is, unless otherwise stated, to a Section hereof.

Section 1.3 Headings. Headings and sub-headings are for ease of reference only and shall not affect the construction of this Agreement.

## ARTICLE II

### ASSUMPTION AND AGREEMENT

Section 2.1 Assumption. The Indemnitor hereby (i) irrevocably and unconditionally assumes (a) the rights and obligations of the Issuer under or pursuant to the Security Agreements with respect to the Transferred Assets and (b) the due and punctual performance of the Note, including without limitation the payment of the amount payable in respect of the Note as and when the same becomes due and payable, and (ii) agrees and covenants to make payment of monies in the manner and currency prescribed by the Note, which the Issuer shall be liable to pay under and pursuant to the Note. Notwithstanding the foregoing assumption, the Issuer shall remain primarily liable under the Note and the Security Agreements to the Holder (in its capacity as Holder of the Note and as Trustee under the Security Agreements) for compliance with the obligations and for the payment of the amounts assumed hereby by the Indemnitor.

Section 2.2 Reinstatement. If any payment received by a Holder shall, on the subsequent bankruptcy, insolvency, corporate reorganization or other similar event of the Issuer, be avoided or set aside under any laws relating to such events, such payment shall not be considered as discharging or diminishing the liability of the Indemnitor therefor and this Agreement shall continue to be effective, or be reinstated, as the case may be, as if such payment had at all times remained owing by the Issuer; *provided that* the obligations of the Issuer and/or the Indemnitor under this clause shall, as regards each payment made to the Holder which is avoided or set aside, be contingent upon such payment being reimbursed to the Issuer or other persons entitled through the Issuer.

Section 2.3 Immediate Recourse. The Indemnitor waives any right it may have of first requiring a Holder to proceed against or enforce any other rights or security against the Issuer or any other person before claiming from the Indemnitor hereunder.

Section 2.4 Agreement. The parties hereby agree that the Indemnitor's interest in the Transferred Assets is substituted directly for the Issuer's interest in the Transferred Assets under and subject to the lien of each of the Security Agreements, free and clear of all other liens except the subordinated lien of the First Mortgage. The Indemnitor hereby represents that:

(i) it is an electric utility engaged in the business of the production, transmission and distribution of electric energy lawfully,

(ii) it is entitled to acquire and operate the Transferred Assets; and

(iii) its acquisition of the Transferred Assets complies in all material respects with terms and conditions of each of the Security Agreements and shall in no respect impair the lien of such Security Agreement in contravention of the terms thereof or the priority of the lien thereof in and to the property subject thereto, or the security afforded thereby, or any of the rights or powers of the Trustees thereunder.

The Indemnitor hereby agrees, subject, as permitted by the terms and conditions of each of the Security Agreements, to the subordinated lien of the First Mortgage, to protect the estate and interest granted to the Trustees by each of the Security Agreements, the priority thereof, the security afforded thereby, and the rights and powers of the Trustees thereunder. The Indemnitor further agrees to execute and deliver to the Trustee a Sixth Supplement to the Security Agreements in the form attached hereto as Exhibit B to evidence the succession to the Issuer by the Indemnitor and the assumption of the Security Agreements.

### ARTICLE III

#### INDEMNITY

Section 3.1 Indemnity. If the Issuer were to make any payment due under the Note after the date hereof, [including without limitation as the result of any optional or mandatory redemption or other prepayment,] whether in whole or in part, the Indemnitor shall promptly reimburse the Issuer on demand and shall indemnify and hold harmless the Issuer for such payment and against any loss, liability, claim, judgment, damage, cost, expense or disbursement of any kind or nature whatsoever arising from or relating to a failure by the Indemnitor to make such payment in lieu of the Issuer when due.

Section 3.2 Continuing Indemnity. The indemnity in Section 3.1 is a continuing indemnity and shall extend to the ultimate balance of all the obligations of the Issuer under the Note notwithstanding any settlement of account or other matter or thing whatsoever. It shall remain in full force and effect until all such obligations have been irrevocably paid and satisfied in full. Furthermore, such obligations are additional to, and not in substitution for, any security or other guarantee or indemnity at any time existing for the benefit of any person.

### ARTICLE IV

#### MISCELLANEOUS

Section 4.1 Binding Effect. Any reference herein to the Indemnitor or the Holder shall be deemed to include the successors and assigns of such parties, and all covenants, promises and agreements by or on behalf of the Indemnitor that are contained in this Agreement shall bind and inure to the benefit of each of the Indemnitor and the Holder and their respective successors and assigns.

Section 4.2 Assignment. The Issuer shall not be entitled to assign or transfer all or any of its rights, benefits and obligations hereunder. The Indemnitor shall be entitled to assign, without the need to obtain consent from the Holder or the Issuer, its rights and obligations hereunder in connection with its transfer of the Transferred Assets to a "successor corporation" or in connection with any lawful consolidation or merger of the Indemnitor with or into any other corporation, as such terms are defined in the Security Agreements; provided that, and without prejudice to the requirements of the Financing Agreement and the Security Agreements which must be complied with in connection with such a transfer, such "successor corporation" shall execute an assumption

agreement in the form attached hereto as Exhibit C. Each Holder shall be entitled to assign all or any of its rights and benefits hereunder.

Section 4.3 Partial Invalidity. If at any time any provision hereof is or becomes illegal, invalid or unenforceable in any respect under the laws of any jurisdiction, neither the legality, validity or enforceability of the remaining provisions hereof nor the legality, validity or enforceability of such provision under the laws of any other jurisdiction shall in any way be affected or impaired thereby.

Section 4.4 Governing Law. This Agreement is governed by, and shall be construed in accordance with, the laws of the State of New York.

Section 4.5 No Recitals, etc.. The Trustee and the Holder shall not be responsible in any manner whatsoever for or in respect of the validity or sufficiency of this Agreement or the due execution hereof by the Issuer and the Indemnitor or for or in respect of the recitals contained herein, all of which are made by the Issuer and the Indemnitor solely.

[Remainder of Page Intentionally Left Blank]

**IN WITNESS WHEREOF**, this Agreement has been executed by the Issuer, the Indemnitor and the Holder and is intended to be and is hereby delivered on the date first written above.

**ALLEGHENY ENERGY SUPPLY COMPANY,  
LLC, as Issuer**

By: \_\_\_\_\_  
Name:  
Title:

**MONONGAHELA POWER COMPANY, as  
Indemnitor**

By: \_\_\_\_\_  
Name:  
Title:

**THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A., as Trustee and as Holder**

By: \_\_\_\_\_  
Name:  
Title:



## **Schedule I**

### **Security Agreements**

1. Deed of Trust and Security Agreement, dated as of November 1, 1977, among Allegheny Energy Supply Company, LLC (as successor in interest to West Penn Power Company), The Bank of New York Trust Company, N.A., as successor trustee, and Alfred J. Lemley, as individual trustee, as supplemented by a First Supplement to Deed of Trust and Security Agreement, dated as of August 1, 1978, a Second Supplement to Deed of Trust and Security Agreement, dated as of April 1, 1999, a Third Supplement to the Deed of Trust and Security Agreement, dated as of November 17, 1999, a Fourth Supplement to Deed of Trust and Security Agreement, dated as of November 18, 1999; and a Fifth Supplement to Deed of Trust and Security Agreement, dated as of October 15, 2007.
2. Deed of Trust and Security Agreement, dated as of November 1, 1977, among Allegheny Energy Supply Company, LLC (as successor in interest to The Potomac Edison Power Company), The Bank of New York Trust Company, N.A., as successor trustee, and Alfred J. Lemley, as individual trustee, as supplemented by a First Supplement to Deed of Trust and Security Agreement, dated as of August 1, 1978, a Second Supplement to Deed of Trust and Security Agreement, dated as of April 1, 1999, a Third Supplement to the Deed of Trust and Security Agreement, dated as of November 17, 1999, a Fourth Supplement to Deed of Trust and Security Agreement, dated as of November 18, 1999; and a Fifth Supplement to Deed of Trust and Security Agreement, dated as of October 15, 2007.

**EXHIBIT A**  
**Copy of Note**

**[Attached]**

October 15, 2007

\$142,000,000

**ALLEGHENY ENERGY SUPPLY COMPANY, LLC  
POLLUTION CONTROL NOTE  
(Pleasants County, West Virginia)  
2007 SERIES F**

ALLEGHENY ENERGY SUPPLY COMPANY, LLC (the "Company"), a Delaware limited liability company, for value received, promises to pay to THE BANK OF NEW YORK TRUST COMPANY, N.A. (the "Trustee"), as successor trustee under the Trust Indenture dated as of November 1, 1977 (the "Original Indenture"), as supplemented by a First Supplemental Indenture dated as of August 1, 1978 (the "First Supplemental Indenture"), a Second Supplemental Indenture dated as of May 15, 1995 (the "Second Supplemental Indenture"), a Third Supplemental Indenture dated as of February 1, 1998 (the "Third Supplemental Indenture"), a Fourth Supplemental Indenture dated as of April 1, 1998, and a Fifth Supplemental Indenture dated as of October 15, 2007 (the "Fifth Supplemental Indenture") (collectively, the "Indenture"), between The County Commission of Pleasants County, West Virginia (the "County") and the Trustee, relating to the County's Pollution Control Revenue Bonds (Allegheny Energy Supply Company, LLC Pleasants Station Project), 2007 Series F (Non-AMT) (the "2007 Series F Bonds"), the principal sum of \$142,000,000 on October 15, 2037. The Company shall pay interest on the unpaid portion of such principal sum, at the rate of 5.25% per annum from the date hereof until the date such principal sum shall become due, and the Company shall pay interest on overdue principal and, to the extent legally enforceable, on overdue interest, at the aforesaid rate per annum. Interest shall be payable on April 15 and October 15 of each year commencing April 15, 2008. All capitalized terms used herein and not otherwise defined herein shall have the meanings ascribed to such terms in the Indenture.

This Note is issued pursuant to a certain Pollution Control Financing Agreement (the "Agreement") dated as of November 1, 1977, as supplemented and amended, between the County and the Company (as successor in interest to The Potomac Edison Company and West Penn Power Company) and Monongahela Power Company ("Mon Power") (collectively, the "Companies") relating to a project (the "Project") consisting of the financing of certain pollution control facilities (the "Facilities") at the Companies' Pleasants Power Station. This Note is secured by a Deed of Trust and Security Agreement dated as of November 1, 1977, as supplemented and amended, including as of October 15, 2007 (the "Security Agreement"), creating in favor of the Trustee a lien on the Company's interest in the Facilities.

The Company has, or its predecessors in interest have, pursuant to the Agreement, heretofore issued similar Pollution Control Notes, all but one series of which will no longer be outstanding after the application of the proceeds of the 2007 Series F Bonds to defease, for redemption and payment at maturity, respectively, of the County's Pollution Control Revenue Bonds (Monongahela Power Company Pleasants Station Project), 1998 Series D; Pollution Control Revenue Bonds (The Potomac Edison Company Pleasants Station Project), 1995 Series C and 1998 Series D, and Pollution Control Revenue Bonds (West Penn Power Company

Pleasants Station Project), 1995 Series C and 1998 Series D. Additional similar Notes may be issued by the Company as provided in the Agreement, all such Notes so issued being hereinafter collectively called the "Notes."

The obligation of the Company to make the payments required hereunder shall be absolute and unconditional without defense or set-off by reason of any default by the County or by any of the other Companies under the Agreement or under any other agreement between the County and the Company or any of the other Companies, or for any other reason, including, without limitation, any acts or circumstances that may constitute failure of consideration, any dispute between the Company and the Trustee, destruction of or damage to the Facilities, commercial frustration of purpose, or failure of the County to perform and observe any agreement, whether express or implied, or any duty, liability or obligation arising out of or connected with the Agreement, its being the intention of the Company and the County that the payments hereunder will be paid in full when due without any delay or diminution whatsoever.

This Note is subject to prepayment at the option of the Company, prior to maturity, upon not less than 45 days prior written notice to the Trustee, in whole or in integral multiples of \$5,000, on October 15, 2017 or any date thereafter, plus interest accrued to the prepayment date at 100% of par.

This Note is also subject to extraordinary optional prepayment at any time prior to maturity by the Company, upon not less than 45 days prior written notice to the Trustee, at the extraordinary prepayment price equal to 100% of the principal amount hereof plus interest accrued to the repayment date, if the Company has determined that:

(i) the continued operation of the Pleasants Station, the Project or the Facilities is impracticable, uneconomical or undesirable due to (a) the imposition of taxes or other liabilities or burdens not being imposed as of the date of this Note, (b) changes in technology or in the economic availability of raw materials or operating supplies or equipment or (c) destruction of or damage to all or a substantial portion of the Pleasants Station, the Project or the Facilities; or

(ii) all or substantially all of the Pleasants Station, the Project or the Facilities have been condemned or taken by eminent domain; or

(iii) the operation by the Company of the Pleasants Station, the Project or the Facilities has been enjoined for a period of at least six consecutive months; or

(iv) as a result of any change in the Constitution of the United States of America or of the Constitution of the state of West Virginia, or as a result of any legislative or administrative action (whether state or federal) or by final decree, judgment or order of any court or administrative body (whether state or federal) after any contest thereof by the Company in good faith, the Indenture, the Agreement, this Note or the 2007 Series F Bonds become void or unenforceable or impossible to perform in accordance with the intent and purposes of the parties as expressed in the Agreement.

Any such extraordinary optional prepayment must be made not more than one year from the date of the occurrence of the event that results in such determination by the Company.

Upon receipt of notice of optional prepayment, the Trustee shall take all action necessary under the Indenture to redeem 2007 Series F Bonds in an amount corresponding to that specified in the notice.

This Note is subject to mandatory prepayment at any time at the principal amount thereof plus interest accrued to the prepayment date, without premium, in the event that it is determined by the Internal Revenue Service or a court of competent jurisdiction, as a result of a proceeding in which the Company participates to the degree it deems sufficient, and which determination the Company, in its discretion, does not contest by an appropriate proceeding, directly or through a holder of a 2007 Series F Bond; that, as a result of a failure by the Company to observe any covenant, agreement or representation in the Agreement or in this Note, the interest payable on the 2007 Series F Bonds is includible for Federal income tax purposes in the gross income of any holder of a 2007 Series F Bond, other than a holder who is a "substantial user" of the Facilities or a "related person," as provided in Section 103(b)(13) of the Internal Revenue Code of 1954 or Section 147(a) of the Internal Revenue Code of 1986, as amended (the "Code"), as applicable, and the applicable regulations thereunder. Any such prepayment shall be on any date within 180 days from the time of such determination and shall be of the entire principal amount of the 2007 Series F Bonds then outstanding or such portion of the 2007 Series F Bonds as shall, in the opinion of recognized bond counsel, preserve the exclusion from gross income of interest on the portion of the 2007 Series F Bonds outstanding after such prepayment. If such prepayment shall occur in accordance with the terms hereof, then such failure by the Company to observe such covenant, agreement or representation as aforesaid shall not in and of itself constitute an Event of Default under the Indenture or under any Pollution Control Note of the Company.

Whenever payment or provision therefor has been made in respect of the principal or redemption price of, or interest on, all or any portion of such 2007 Series F Bonds in accordance with the Indenture, this Note shall be deemed paid to the extent such payment or provision therefor has been made, and if thereby deemed paid in full this Note shall be canceled and returned to the Company.

Payment of all or any portion of principal, of prepayment price and of interest on this Note may be made in advance of the date when otherwise due or payable by delivery to the Trustee of a combination of cash and Investment Obligations (as defined in the Indenture) maturing as to principal and interest in such amounts and at such times that such combination of cash and Investment Obligations will provide sufficient moneys to make such payments on the date the same become due or payable. Any delivery of cash and Investment Obligations as provided in this paragraph shall be accompanied by appropriate directions not unsatisfactory to the Trustee specifying the payments hereunder to which the same shall be applied. The Company hereby covenants that, if for any reason such combination of cash and Investment Obligations does not provide sufficient moneys to make any such payment when due, it will forthwith upon the demand of the Trustee pay such amount to the Trustee as shall cure such insufficiency. Upon the receipt of cash and Investment Obligations as provided in this

paragraph, the Trustee shall confirm to the Company and note hereon the payments on this Note thereby effected.

The Company covenants (i) that it will provide such information and perform such acts (or cause such acts to be performed) as appropriate or necessary to enable the County to comply with the information reporting requirements of Section 149(e) of the Code, (ii) that the maturity of the 2007 Series F Bonds will not exceed 120 percent of the average reasonably expected economic life (within the meaning of Section 147(b) or other applicable provisions of the Code) of the Facilities, (iii) that it will furnish to the Trustee such information and investment instructions as are necessary to ensure compliance with Section 148 of the Code and that it will pay to the Trustee on demand any amounts required to be rebated to the United States pursuant to said Section 148, (iv) that the proceeds of the 2007 Series F Bonds will be applied to the refunding of all of the County's outstanding Pollution Control Revenue Bonds (The Potomac Edison Company Pleasants Station Project), 1995 Series C and 1998 Series D, all of the County's outstanding Pollution Control Revenue Bonds (West Penn Power Company), 1995 Series C and 1998 Series D, and a portion of the County's outstanding Pollution Control Revenue Bonds (Monongahela Power Company Pleasants Station Project), 1995 Series C and 1998 Series D (the "Bonds To Be Refunded"), as more fully provided in the above mentioned Fifth Supplemental Indenture, and (v) that it is depositing with the Trustee on the date hereof, such amount which, taken together with the proceeds of the 2007 Series F Bonds available therefor, will constitute an amount sufficient to pay the Series D Bonds maturing on November 1, 2007, and redeem the Series C Bonds on November 21, 2007.

Further, the Company covenants that it will (i) take such actions as will be necessary or desirable to comply with all requirements of the Code that must be satisfied in order that interest on the 2007 Series F Bonds is and continues to be excludable from gross income for federal income tax purposes and (ii) take such actions and make, or cause to be made, all calculations, transfers and payments that may be necessary to comply with the rebate requirements contained in the Code and the Indenture.

The Company has agreed in a Continuing Disclosure Agreement entered in connection with the 2007 Series F Bonds and does hereby agree to provide or cause to be provided financial information and operating data of the Company, audited financial statements and notices, in such manner as may be required for compliance with Rule 15c2-12 of the Securities and Exchange Commission; provided, that a default under such Continuing Disclosure Agreement or with the foregoing agreement shall not constitute an Event of Default under this Note or the Agreement.

All payments of principal, prepayment price and interest shall be made to the Trustee at its principal corporate trust office in New York, New York, and, except as otherwise provided above, in such coin or currency of the United States of America as at the time of payment shall be legal tender for the payment of public and private debts. The Trustee will note hereon, from time to time and in any event before any transfer or other disposition of this Note, the amount and application of all payments made with respect to this Note.

In case one or more of the following Events of Default shall have occurred and be continuing:

**(a)** default in the payment of any installment of principal, prepayment price or interest in respect of any Note as and when the same shall become due and payable, provided, that such default shall not constitute an Event of Default unless it continues for more than three days after the Trustee gives the Company written notice of such default; or

**(b)** failure on the part of the Company duly to perform or observe any other of the covenants on the part of the Company contained in any Note, in the Security Agreement or in the Agreement for a period of 60 days after written notice of such failure shall have been given to the Company and to the County by the Trustee; or

**(c)** if a proceeding shall have been instituted in a court having jurisdiction in the premises seeking a decree or order for relief in respect of the Company in an involuntary case under any applicable bankruptcy, insolvency or other similar law, or for the appointment of a receiver, liquidator, assignee, custodian, trustee, sequestrator (or similar official) of the Company or for any substantial part of its property, or for the winding-up or liquidation of its affairs, and such proceeding shall remain undismissed or unstayed and in effect for a period of 60 consecutive days or such court shall enter a decree or order granting the relief sought in such proceeding; or

**(d)** if the Company shall commence a voluntary case under any applicable bankruptcy, insolvency or other similar law, or shall consent to the entry of an order for relief in an involuntary case under any such law, or shall consent to the appointment of or taking possession by a receiver, liquidator, assignee, trustee, custodian, sequestrator (or other similar official) of the Company or for any substantial part of its property, or shall make a general assignment for the benefit of creditors, or shall fail generally to pay its debts as they become due, or shall take any corporate action in furtherance of any of the foregoing; or

**(e)** if, under the provisions of any other law for the relief or aid of debtors, any court of competent jurisdiction shall assume custody or control of the Company or of any part of its property and such custody or control shall not be terminated or stayed within 90 days from the date of assumption of such custody or control;

then and in each and every such case, the Trustee, by notice in writing to the Company, may declare the unpaid balance of this Note to be due and payable immediately, if concurrently with or prior to such notice and declaration the unpaid principal amount of the 2007 Series F Bonds has been declared to be due and payable, and upon any such declaration this Note shall become and shall be immediately due and payable, anything in this Note, in the Security Agreement or in the Agreement to the contrary notwithstanding. In the event that this Note shall have become immediately due and payable as aforesaid, the Trustee shall have the right, subject to applicable law and to the obtaining of all required regulatory approvals, to sell, assign, transfer or otherwise dispose of this Note and the Security Agreement notwithstanding any provision to the contrary in this Note, in the Security Agreement or in the Agreement.

VOID

In case the Trustee shall have proceeded to enforce its rights under this Note, and such proceedings shall have been discontinued or abandoned for any reason or shall have been determined adversely to the Trustee, then and in every such case the Company and the Trustee shall be restored respectively to their several positions and rights hereunder, and all rights, remedies and powers of the Company and the Trustee shall continue as though no such proceeding had been taken.

VOID

The Company covenants that, in case an Event of Default shall occur with respect to the payment of any installment of principal, prepayment price or interest in respect of any Note - whether at maturity or upon prepayment or by declaration or otherwise - then, upon demand of the County or the Trustee, the Company will pay to the Trustee the whole amount that then shall have become due and payable on all the Notes for principal, prepayment price and interest, as the case may be, with interest on the overdue principal and prepayment price, and (to the extent enforceable under applicable law) on the overdue installments of interest, at the rate or rates borne by the respective Notes, and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including reasonable compensation to the Trustee, its agents, attorneys and counsel, and any expenses or liabilities incurred by the Trustee other than through its negligence or bad faith.

VOID

In case the Company shall fail forthwith to pay such amounts upon such demand, the Trustee shall be entitled and empowered to exercise any of its rights and remedies under the Security Agreement and to institute any action or proceeding at law or in equity for the collection of sums so due and unpaid, and may prosecute any such action or proceeding to judgment or final decree, and may enforce any such judgment or final decree against the Company and collect, in the manner provided by law out of the property of the Company, the moneys adjudged or decreed to be payable.

VOID

In case there shall be pending proceedings for the bankruptcy or for the reorganization of the Company under the Federal bankruptcy laws or any other applicable law, or in case a receiver or trustee shall have been appointed for the property of the Company, or in the case of any other similar judicial proceedings relative to the Company or to the creditors or property of the Company, the Trustee shall be entitled and empowered, by intervention in such proceedings or otherwise, to file and prove a claim or claims for the whole amount of principal, prepayment price and interest owing and unpaid in respect of the Notes and, in case of any judicial proceedings, to file such proofs of claim and other papers or documents as may be necessary or advisable in order to have the claims of the Trustee allowed in such judicial proceedings relative to the Company, its creditors or its property, and to collect and receive any moneys or other property payable or deliverable on any such claims, and to distribute the same after the deduction of its charges and expenses; and any receiver, assignee or trustee in bankruptcy or reorganization is hereby authorized to make such payments to the Trustee and to pay to the Trustee any amount due it for compensation and expenses, including counsel fees incurred by it up to the date of such distribution.

No recourse shall be had for the payment of the principal or prepayment price of, or interest on, this Note, or for any claim based hereon, on the Security Agreement or on the Agreement, against any officer, director or stockholder, past, present or future, of the Company



as such, either directly or through the Company, under any constitutional provision, statute or rule of law, or by the enforcement of any assessment or by any legal or equitable proceeding or otherwise.


This Note may not be amended except by an instrument in writing signed on behalf of the Company and the Trustee, and, if such amendment adversely affects the interests of the holders of any Bonds outstanding under the Indenture, then only with the consent of such holders given in accordance with the Indenture.

This Note shall at all times be and remain part of the trust estate under the Indenture, and no assignment or transfer by the Trustee of its rights hereunder shall be effective other than (i) a transfer made after an Event of Default under the Indenture in the course of the Trustee's exercise of its rights and remedies consequent upon such Event of Default, or (ii) a transfer required in the performance of the Trustee's duties under the Indenture, including a transfer to a successor trustee.

IN WITNESS WHEREOF, the Company has caused this Note to be duly executed, countersigned and delivered as of this 15th day of October 2007.

ALLEGHENY ENERGY SUPPLY COMPANY, LLC

By

  
Barry E. Pakenham  
Treasurer

Countersigned:

By

  
James A. Arcuri  
Assistant Secretary

**PAYMENTS OF PRINCIPAL**

**Date of  
Payment**

**Amount**

**Unpaid  
Balance**

**Signature of Person  
Making Notation**

**EXHIBIT B**  
**Form of Sixth Supplement to the Security Agreements**

**MONONGAHELA POWER COMPANY,**  
**AS "SUCCESSOR CORPORATION" TO**  
**ALLEGHENY ENERGY SUPPLY COMPANY, LLC**

**SIXTH SUPPLEMENT TO DEEDS OF TRUST AND SECURITY AGREEMENTS**

**(Pleasants County, West Virginia)**

**THIS SIXTH SUPPLEMENT TO THE DEEDS OF TRUST AND SECURITY AGREEMENTS**, dated as of [ ] [ ], 2017 between **ALLEGHENY ENERGY SUPPLY COMPANY, LLC**, a Delaware limited liability company (the "*Company*"), **MONONGAHELA POWER COMPANY**, an Ohio corporation ("*Monongahela*"), and **THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.**, a national banking association, as successor trustee, and [TBD], as individual trustee (collectively, the "*Trustees*").

**WITNESSETH:**

WHEREAS, the Company, as successor Grantor to West Penn Power Company, and the Trustees are parties to the Deed of Trust and Security Agreement, dated as of November 1, 1977, as supplemented by a First Supplement to Deed of Trust and Security Agreement, dated as of August 1, 1978, a Second Supplement to Deed of Trust and Security Agreement, dated as of April 1, 1999, a Third Supplement to the Deed of Trust and Security Agreement, dated as of November 17, 1999, a Fourth Supplement to Deed of Trust and Security Agreement, dated as of November 18, 1999; and a Fifth Supplement to Deed of Trust and Security Agreement, dated as of October 15, 2007 (as so supplemented, the "*West Penn Security Agreement*"); and

WHEREAS, the Company, as successor Grantor to The Potomac Edison Company, and the Trustees are parties to the Deed of Trust and Security Agreement, dated as of November 1, 1977, as supplemented by a First Supplement to Deed of Trust and Security Agreement, dated as of August 1, 1978, a Second Supplement to Deed of Trust and Security Agreement, dated as of April 1, 1999, a Third Supplement to the Deed of Trust and Security Agreement, dated as of November 17, 1999, a Fourth Supplement to Deed of Trust and Security Agreement, dated as of November 18, 1999; and a Fifth Supplement to Deed of Trust and Security Agreement, dated as of October 15, 2007 (as so supplemented, the "*Potomac Edison Security Agreement*" and together with the West Penn Security Agreement, the "*Security Agreements*"); and

WHEREAS, pursuant to the Fifth Supplement to the Security Agreements, dated as of October 15, 2007, the Company is the "successor corporation" to, as applicable, West Penn Transferring Agent, LLC and PE Transferring Agent, LLC, as each such term is defined for purposes of the Security Agreements; and

WHEREAS, the Company has agreed to convey and transfer, subject to the estates and interests granted to the Trustees by the Security Agreements, all the Mortgaged Facilities and the Mortgaged Site to Monongahela; and

WHEREAS, such transfer and conveyance of the Mortgaged Facilities and the Mortgaged Site is permitted, and shall be effected in accordance with, the Security Agreements; and

WHEREAS, the Company and Monongahela are delivering to the Trustees (x) Opinions of Counsel pursuant to Sections 7.01 and 7.04 of the Security Agreements, and (y) an Officer's Certificate pursuant to Section 7.01 of the Security Agreements; and

WHEREAS, pursuant to appropriate resolutions of its Board of Directors, the Company has duly resolved and determined to execute and deliver to the Trustee this Sixth Supplement to the Security Agreements to evidence the succession to the Company by Monongahela and the assumption by such "successor corporation," as defined in Section 6.02 of the Security Agreements, of the covenants and obligations of the Company under the Security Agreements as supplemented hereby; and

WHEREAS, Monongahela has assumed the due and punctual performance of the Company's Pollution Control Notes under an Assumption and Indemnity Agreement for the benefit of the holders of such Pollution Control Notes, dated as of the date hereof; and

WHEREAS, all conditions and requirements necessary to make this Sixth Supplement to the Security Agreements a valid, binding and legal instrument have been performed and the execution and delivery hereof have been in all respects duly authorized:

**NOW, THEREFORE, THIS SIXTH SUPPLEMENT TO THE SECURITY AGREEMENTS WITNESSETH,**

## **PART I**

### **ASSUMPTION AND SUCCESSION**

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, upon the execution of this Sixth Supplement to the Security Agreements by the parties hereto, Monongahela, pursuant to Section 6.01 of the Security Agreements, hereby assumes to be solely liable and responsible for all covenants and agreements of the Security Agreements to be kept or performed by the Company.

The Trustees hereby acknowledge (i) that Monongahela has assumed the due and punctual performance of the Pollution Control Notes; and (ii) that Monongahela, by operation of and pursuant to Section 6.02 of the Security Agreements, has succeeded to and has been substituted for the Company under the Security Agreements with the same effect as if Monongahela had been named in the Security Agreements, as supplemented hereby, as the mortgagor, and may thereafter, subject to all the terms, conditions and restrictions in the Security Agreements, exercise all the powers and rights that the Company might or could exercise prior to such consolidation, merger, sale, conveyance or transfer, in the name of such successor corporation or otherwise.

## **PART II**

### **REPRESENTATIONS, WARRANTIES AND COVENANTS**

Monongahela hereby represents and warrants that the acceptance by it of the Mortgaged Facilities and the Mortgaged Site is upon such terms as shall in no respect impair the estates and interests granted to the Trustee by the Security Agreement or the priority thereof, in and to the property subject thereto, or the security afforded thereby, or any of the rights or powers of the Trustee thereunder and hereby covenants to protect the estates and interests granted to the Trustee by the Security Agreement, the priority thereof, the security afforded thereby, and the rights and powers of the Trustee thereunder; *provided, however*, that the Mortgaged Facilities and the Mortgaged Site may also be made subject to the lien of that certain Trust Indenture, dated as of August 1, 1945, between Monongahela, as issuer, and Citibank, N.A., as trustee (as amended and supplemented, the "First Mortgage"), which will be subordinate to the lien granted by each of the Security Agreements.

## **PART III**

### **MISCELLANEOUS**

For purposes of Section 8.03 of the Security Agreement, the address of Monongahela is: 5001 NASA Blvd., Fairmont, West Virginia 26554.

The Trustees shall not be responsible in any manner whatsoever for or in respect of the validity or sufficiency of this Sixth Supplement to the Security Agreements or the due execution hereof by the Company and Monongahela or for or in respect of the recitals contained herein, all of which are made by the Company and Monongahela solely.

As supplemented by this Sixth Supplement, the Security Agreements are in all respects ratified and confirmed, and this Sixth Supplement to the Security Agreements shall be read, taken and construed as part of the Security Agreements so that all of the rights, remedies, terms, conditions, covenants and agreements of the Security Agreements shall apply and remain in full force and effect with respect to this Sixth Supplement to the Security Agreements and to the Pollution Control Notes issued and outstanding from time to time.

For all purposes hereof, all terms contained in this Sixth Supplement to the Security Agreements shall, except as the context may otherwise require or as provided herein, have the meanings given to such terms in Article I of the Security Agreements.

This Sixth Supplement to the Security Agreements may be simultaneously executed in any number of counterparts, each of which when so executed shall be an original; but such counterparts shall together constitute but one and the same instrument.

[Remainder of Page Left Intentionally Blank]

**IN WITNESS WHEREOF**, Allegheny Energy Supply Company. LLC, has caused this Sixth Supplement to the Security Agreements to be executed by its President or Vice President, attested by its Corporate Secretary or Assistant Corporate Secretary, Monongahela Power Company has caused this Sixth Supplement to the Security Agreements to be executed by its President or Vice President, attested by its Corporate Secretary or Assistant Corporate Secretary, The Bank of New York Mellon Trust Company, N.A., as successor trustee, has caused this Sixth Supplement to the Security Agreements to be executed by one of its Vice Presidents and its seal to be hereunto affixed and attested, and [TBD], as individual trustee has executed this Sixth Supplement to the Security Agreements, all as of the day and year first above written.

Attest:

**ALLEGHENY ENERGY SUPPLY  
COMPANY, LLC**

\_\_\_\_\_

By: \_\_\_\_\_

Name:

Name:

Title:

Title:

*(Corporate Seal)*

**STATE OF \_\_\_\_\_,**

**COUNTY OF \_\_\_\_\_, TO WIT:**

I, \_\_\_\_\_, a Notary Public of said County, do certify that \_\_\_\_\_, who signed the writing hereto annexed dated as of the \_\_\_\_ day of \_\_\_\_\_, 201, for the Allegheny Energy Supply Company, LLC, a Delaware limited liability company, has this day in my said County, before me, acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and official seal this \_\_\_\_\_ day of \_\_\_\_\_, 2017.

\_\_\_\_\_  
Name:

*Commission expires* \_\_\_\_\_

(NOTARIAL SEAL)

[Signatures Continue onto Next Page]

Attest:

**MONONGAHELA POWER  
COMPANY**

\_\_\_\_\_

By: \_\_\_\_\_

Name:

Name:

Title:

Title:

*(Corporate Seal)*

**STATE OF \_\_\_\_\_,**

**COUNTY OF \_\_\_\_\_, TO WIT:**

I, \_\_\_\_\_, a Notary Public of said County, do certify that \_\_\_\_\_, who signed the writing hereto annexed dated as of the \_\_\_\_ day of \_\_\_\_\_, 2017, for the Monongahela Power Company, an Ohio corporation, has this day in my said County, before me, acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and official seal this \_\_\_\_\_ day of \_\_\_\_\_, 2017.

\_\_\_\_\_

Name:

*Commission expires* \_\_\_\_\_

(NOTARIAL SEAL)

[Signatures Continue onto Next Page]

Attested:

**THE BANK OF NEW YORK MELLON**

**TRUST COMPANY, N.A.,**

As Successor Trustee as aforesaid

\_\_\_\_\_  
Name:

By: \_\_\_\_\_

Name:

Title:

Title:

*(Corporate Seal)*

STATE OF \_\_\_\_\_,

COUNTY OF \_\_\_\_\_, TO WIT:

I, \_\_\_\_\_, a Notary Public of said County, do certify that \_\_\_\_\_, who signed the writing hereto annexed dated as of the \_\_\_\_ day of \_\_\_\_\_, 2017, for the The Bank of New York Mellon Trust Company, N.A., an national banking association, has this day in my said County, before me, acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and official seal this \_\_\_\_\_ day of \_\_\_\_\_, 2017.

\_\_\_\_\_  
Name:

Commission expires \_\_\_\_\_

(NOTARIAL SEAL)



\_\_\_\_\_  
[TBD], As Individual Trustee as aforesaid

STATE OF \_\_\_\_\_,

COUNTY OF \_\_\_\_\_, TO WIT:

I, \_\_\_\_\_, a Notary Public of said County, do certify that [TBD], who signed the writing hereto annexed dated as of the \_\_\_\_ day of \_\_\_\_\_, 2017, has this day in my said County, before me, acknowledged the said writing to be his act and deed.

Given under my hand and official seal this \_\_\_\_\_ day of \_\_\_\_\_, 2017.

\_\_\_\_\_  
Name:

*Commission expires* \_\_\_\_\_

(NOTARIAL SEAL)

**EXHIBIT C**  
**Form of Assumption Letter**

**[Letterhead of Successor Company]**

Allegheny Energy Supply Company, LLC  
[800 Cabin Hill Drive  
Greensburg, Pennsylvania 15601]  
Attn: [Assistant Corporate Secretary]

The Bank of New York Mellon Trust Company, N.A.,  
as successor Trustee under the Deeds of Trust  
and Security Agreements referenced on Schedule  
I hereto (the "Security Agreements")  
1660 West 2nd Street, Suite 830  
Cleveland, OH 44113  
Attn: Earl Hunt, Vice President

[[TBD], as Individual Trustee under  
the Security Agreements  
[**ADDRESS**]]

Re: Assumption under Assumption and Indemnity Agreement (as defined below)

Ladies and Gentlemen:

Reference is made to the Assumption and Indemnity Agreement, dated as of [ ] [ ], 2017 (the "***Assumption and Indemnity Agreement***"), among Monongahela Power Company, an Ohio corporation ("***Indemnitor***"), Allegheny Energy Supply Company, LLC, a Delaware limited liability company (the "***Issuer***"), and the Holder, as defined therein. Capitalized terms used and not otherwise defined herein shall have the meanings ascribed to them in the Assumption and Indemnity Agreement.

A. [Insert description of relevant merger, consolidation or asset transfer].

B. Pursuant to Section 4.2 of the Assumption and Indemnity Agreement, the [***SUCCESSOR COMPANY***], in connection with the transaction described in A above, hereby assumes and covenants to be solely liable and responsible for and to perform all obligations of the Indemnitor under the Assumption and Indemnity Agreement. Such assumption and covenant shall be effective as of the date hereof.

[***SUCCESSOR COMPANY***]

By: \_\_\_\_\_  
Name:  
Title:

**MONONGAHELA POWER COMPANY AND SUBSIDIARIES**  
**UNAUDITED INTERIM CONSOLIDATED FINANCIAL STATEMENTS**  
**FOR THE THREE AND NINE MONTHS ENDED SEPTEMBER 30, 2016 AND 2015**

**MONONGAHELA POWER COMPANY AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF INCOME AND COMPREHENSIVE INCOME**  
(Unaudited)

(In millions)	For the Three Months Ended September 30		For the Nine Months Ended September 30	
	2016	2015	2016	2015
<b>STATEMENTS OF INCOME</b>				
<b>REVENUES:</b>				
Electric sales	\$ 436	\$ 390	\$ 1,245	\$ 1,198
Excise tax collections	2	2	6	6
Total revenues	<u>438</u>	<u>392</u>	<u>1,251</u>	<u>1,204</u>
<b>OPERATING EXPENSES:</b>				
Fuel	156	140	436	406
Purchased power from non-affiliates	69	59	194	179
Purchased power from affiliates	6	6	17	18
Other operating expenses	84	81	259	289
Provision for depreciation	31	31	93	91
Amortization (deferral) of regulatory liabilities, net	11	—	28	(12)
General taxes	14	12	35	36
Total operating expenses	<u>371</u>	<u>329</u>	<u>1,062</u>	<u>1,007</u>
<b>OPERATING INCOME</b>	<u>67</u>	<u>63</u>	<u>189</u>	<u>197</u>
<b>OTHER INCOME (EXPENSE):</b>				
Miscellaneous income	3	2	7	7
Interest expense	(20)	(20)	(80)	(60)
Capitalized financing costs	—	1	—	3
Total other expense	<u>(17)</u>	<u>(17)</u>	<u>(53)</u>	<u>(50)</u>
<b>INCOME BEFORE INCOME TAXES</b>	<u>50</u>	<u>46</u>	<u>136</u>	<u>147</u>
<b>INCOME TAXES</b>	<u>20</u>	<u>16</u>	<u>93</u>	<u>54</u>
<b>NET INCOME</b>	<u>\$ 30</u>	<u>\$ 30</u>	<u>\$ 43</u>	<u>\$ 93</u>
<b>STATEMENTS OF COMPREHENSIVE INCOME</b>				
<b>NET INCOME</b>	<u>\$ 30</u>	<u>\$ 30</u>	<u>\$ 43</u>	<u>\$ 93</u>
<b>OTHER COMPREHENSIVE LOSS:</b>				
Pension and OPEB prior service costs	—	—	(2)	(2)
Other comprehensive loss	—	—	(2)	(2)
Income tax benefits on other comprehensive loss	—	—	(1)	(1)
Other comprehensive loss, net of tax	<u>—</u>	<u>—</u>	<u>(1)</u>	<u>(1)</u>
<b>COMPREHENSIVE INCOME</b>	<u>\$ 30</u>	<u>\$ 30</u>	<u>\$ 42</u>	<u>\$ 92</u>

**MONONGAHELA POWER COMPANY AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**  
(Unaudited)

<i>(In millions, except share amounts)</i>	September 30, 2016	December 31, 2015
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash and cash equivalents	\$ 1	\$ 1
Receivables-		
Customers, net of allowance for uncollectible accounts of \$4 and \$6 in 2016 and 2015	123	95
Affiliated companies	53	81
Other	5	5
Materials and supplies	103	128
Restricted funds	10	22
Prepayments and other current assets	40	26
	<u>335</u>	<u>358</u>
<b>UTILITY PLANT:</b>		
In service	3,878	3,743
Less — Accumulated provision for depreciation	409	355
	<u>3,469</u>	<u>3,388</u>
Construction work in progress	104	106
	<u>3,573</u>	<u>3,494</u>
<b>INVESTMENTS:</b>		
Investment in AGC	64	58
Other	1	1
	<u>65</u>	<u>59</u>
<b>DEFERRED CHARGES AND OTHER ASSETS:</b>		
Intangible assets	115	122
Other	23	24
	<u>138</u>	<u>146</u>
	<u>\$ 4,111</u>	<u>\$ 4,057</u>
<b>LIABILITIES AND CAPITALIZATION</b>		
<b>CURRENT LIABILITIES:</b>		
Currently payable long-term debt	\$ 169	\$ 18
Short-term borrowings - affiliated companies	139	196
Accounts payable-		
Affiliated companies	56	35
Other	57	67
Accrued taxes	27	31
Accrued interest	21	15
Other current liabilities	35	33
	<u>504</u>	<u>395</u>
<b>CAPITALIZATION:</b>		
Common stockholder's equity-		
Common stock, \$50 par value, 7,000,000 shares authorized and 5,891,000 shares outstanding	295	295
Other paid-in capital	808	807
Accumulated other comprehensive income	7	8
Retained earnings	68	65
Total common stockholder's equity	1,178	1,175
Long-term debt and other long-term obligations	1,352	1,523
	<u>2,530</u>	<u>2,698</u>
<b>NONCURRENT LIABILITIES:</b>		
Accumulated deferred income taxes	671	577
Regulatory liabilities	76	59
Retirement benefits	97	94
Asset retirement obligations	37	34
Purchased power liability	98	103
Other	98	97
	<u>1,077</u>	<u>964</u>
	<u>\$ 4,111</u>	<u>\$ 4,057</u>

**MONONGAHELA POWER COMPANY AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(Unaudited)

(In millions)	For the Nine Months Ended September 30	
	2016	2015
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net income	\$ 43	\$ 93
Adjustments to reconcile net income to net cash from operating activities-		
Provision for depreciation	93	91
Amortization (deferral) of regulatory liabilities, net	28	(12)
Deferred purchased power and other costs, net	6	(14)
Deferred income taxes and investment tax credits, net	87	37
Changes in current assets and liabilities -		
Receivables	4	(1)
Materials and supplies	25	19
Prepayments and other current assets	(10)	(6)
Accounts payable	11	(16)
Accrued taxes	(4)	(10)
Other	(3)	1
Net cash provided from operating activities	<u>280</u>	<u>182</u>
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
New Financing-		
Short-term borrowings, net	—	27
Redemptions and repayments-		
Short-term borrowings, net	(57)	—
Long-term debt	(15)	(14)
Common stock dividend payments	(40)	(10)
Other	(2)	(2)
Net cash (used for) provided from financing activities	<u>(114)</u>	<u>1</u>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Property additions	(168)	(187)
Change in restricted funds	12	10
Asset removal costs	(10)	(5)
Other	—	(1)
Net cash used for investing activities	<u>(166)</u>	<u>(183)</u>
Net change in cash and cash equivalents	—	—
Cash and cash equivalents at beginning of period	1	1
Cash and cash equivalents at end of period	<u>\$ 1</u>	<u>\$ 1</u>

**THE POTOMAC EDISON COMPANY AND SUBSIDIARIES**  
**UNAUDITED INTERIM CONSOLIDATED FINANCIAL STATEMENTS**  
**FOR THE THREE AND NINE MONTHS ENDED SEPTEMBER 30, 2016 AND 2015**

**THE POTOMAC EDISON COMPANY AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF INCOME AND COMPREHENSIVE INCOME**  
(Unaudited)

(In millions)	For the Three Months Ended September 30		For the Nine Months Ended September 30	
	2016	2015	2016	2015
<b>STATEMENTS OF INCOME</b>				
<b>REVENUES:</b>				
Electric sales	\$ 217	\$ 195	\$ 649	\$ 629
Excise tax collections	5	4	13	13
Total revenues	222	199	662	642
<b>OPERATING EXPENSES:</b>				
Purchased power from affiliates	76	63	223	237
Purchased power from non-affiliates	53	56	166	151
Other operating expenses	29	24	88	76
Provision for depreciation	15	14	45	43
Amortization (deferral) of regulatory assets/liabilities, net	4	(2)	10	(3)
General taxes	11	12	34	34
Total operating expenses	188	167	566	538
<b>OPERATING INCOME</b>	<b>34</b>	<b>32</b>	<b>96</b>	<b>104</b>
<b>OTHER INCOME (EXPENSE):</b>				
Miscellaneous income	—	1	1	2
Interest expense	(7)	(6)	(20)	(19)
Total other expense	(7)	(5)	(19)	(17)
<b>INCOME BEFORE INCOME TAXES</b>	<b>27</b>	<b>27</b>	<b>77</b>	<b>87</b>
<b>INCOME TAXES</b>	<b>11</b>	<b>11</b>	<b>33</b>	<b>35</b>
<b>NET INCOME</b>	<b>\$ 16</b>	<b>\$ 16</b>	<b>\$ 44</b>	<b>\$ 52</b>
<b>STATEMENTS OF COMPREHENSIVE INCOME</b>				
<b>NET INCOME</b>	<b>\$ 16</b>	<b>\$ 16</b>	<b>\$ 44</b>	<b>\$ 52</b>
<b>OTHER COMPREHENSIVE LOSS:</b>				
Pension and OPEB prior service costs	(1)	—	(2)	(2)
Other comprehensive loss	(1)	—	(2)	(2)
Income tax benefits on other comprehensive loss	—	—	(1)	(1)
Other comprehensive loss, net of tax	(1)	—	(1)	(1)
<b>COMPREHENSIVE INCOME</b>	<b>\$ 15</b>	<b>\$ 16</b>	<b>\$ 43</b>	<b>\$ 51</b>



**THE POTOMAC EDISON COMPANY AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**  
(Unaudited)

(In millions)	September 30, 2016	December 31, 2015
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Receivables-		
Customers, net of allowance for uncollectible accounts of \$2 in 2016 and 2015	\$ 88	\$ 74
Affiliated companies	29	56
Other	7	8
Other current assets	23	31
	<u>147</u>	<u>169</u>
<b>UTILITY PLANT:</b>		
In service	1,602	1,535
Less — Accumulated provision for depreciation	168	148
	<u>1,434</u>	<u>1,387</u>
Construction work in progress	42	45
	<u>1,476</u>	<u>1,432</u>
<b>DEFERRED CHARGES AND OTHER ASSETS:</b>		
Prepaid purchased power	85	90
Regulatory assets	12	9
Other	34	33
	<u>131</u>	<u>132</u>
	<u>\$ 1,754</u>	<u>\$ 1,733</u>
<b>LIABILITIES AND CAPITALIZATION</b>		
<b>CURRENT LIABILITIES:</b>		
Currently payable long-term debt	\$ 107	\$ 109
Short-term borrowings - affiliated companies	24	80
Accounts payable-		
Affiliated companies	37	36
Other	20	18
Accrued taxes	24	9
Accrued interest	8	8
Customer deposits	22	22
Other current liabilities	12	15
	<u>254</u>	<u>297</u>
<b>CAPITALIZATION:</b>		
Common stockholder's equity-		
Other paid-in capital	331	329
Accumulated other comprehensive income	9	10
Retained earnings	156	137
Total common stockholder's equity	<u>496</u>	<u>476</u>
Long-term debt and other long-term obligations	440	447
	<u>936</u>	<u>923</u>
<b>NONCURRENT LIABILITIES:</b>		
Accumulated deferred income taxes	379	349
Regulatory liabilities	54	34
Retirement benefits	65	64
Adverse power purchase contracts	43	46
Other	23	20
	<u>564</u>	<u>513</u>
	<u>\$ 1,754</u>	<u>\$ 1,733</u>

**THE POTOMAC EDISON COMPANY AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(Unaudited)

(In millions)	For the Nine Months Ended September 30	
	2016	2015
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net income	\$ 44	\$ 52
Adjustments to reconcile net income to net cash from operating activities-		
Provision for depreciation	45	43
Amortization (deferral) of regulatory assets/liabilities, net	10	(3)
Deferred purchased power and other costs, net	(3)	(19)
Deferred income taxes and investment tax credits, net	28	(4)
Changes in current assets and liabilities		
Receivables	14	12
Prepayments and other current assets	5	4
Accounts payable	3	(23)
Accrued taxes	15	10
Other	3	(2)
Net cash provided from operating activities	164	70
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
New financing -		
Short-term borrowings, net	—	35
Long-term debt	—	145
Redemptions and repayments -		
Short-term borrowings, net	(56)	—
Long-term debt	(5)	(150)
Common stock dividend payments	(25)	(25)
Other	(2)	(3)
Net cash (used for) provided from financing activities	(88)	2
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Property additions	(72)	(64)
Cash investments	3	4
Asset removal costs	(7)	(13)
Other	—	1
Net cash used for investing activities	(76)	(72)
Net change in cash and cash equivalents	—	—
Cash and cash equivalents at beginning of period	—	—
Cash and cash equivalents at end of period	\$ —	\$ —

**ALLEGHENY ENERGY SUPPLY COMPANY, LLC AND SUBSIDIARIES**  
**UNAUDITED INTERIM CONSOLIDATED FINANCIAL STATEMENTS**  
**FOR THE THREE AND NINE MONTHS ENDED SEPTEMBER 30, 2016 AND 2015**

**ALLEGHENY ENERGY SUPPLY COMPANY, LLC AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF INCOME (LOSS)**  
(Unaudited)

(In millions)	For the Three Months Ended September 30		For the Nine Months Ended September 30	
	2016	2015	2016	2015
<b>STATEMENTS OF INCOME (LOSS)</b>				
<b>REVENUES:</b>				
Electric sales to non-affiliates	\$ 9	\$ 159	\$ 144	\$ 484
Electric sales to affiliates	158	31	312	56
Total revenues	167	190	456	540
<b>OPERATING EXPENSES:</b>				
Fuel	79	82	200	222
Purchased power	11	8	30	25
Other operating expenses	26	28	96	110
Provision for depreciation	(6)	16	27	45
General taxes	5	5	16	16
Goodwill impairment	—	—	553	—
Total operating expenses	115	139	922	418
<b>OPERATING INCOME (LOSS)</b>	<b>52</b>	<b>51</b>	<b>(466)</b>	<b>122</b>
<b>OTHER INCOME (EXPENSE):</b>				
Investment income	3	2	8	5
Miscellaneous income	—	2	3	4
Interest expense	(10)	(10)	(31)	(29)
Total other expense	(7)	(6)	(20)	(20)
<b>INCOME (LOSS) BEFORE INCOME TAXES (BENEFITS)</b>	<b>45</b>	<b>45</b>	<b>(486)</b>	<b>102</b>
<b>INCOME TAXES (BENEFITS)</b>	<b>11</b>	<b>10</b>	<b>(67)</b>	<b>28</b>
<b>NET INCOME (LOSS)</b>	<b>34</b>	<b>35</b>	<b>(419)</b>	<b>74</b>
Income attributable to noncontrolling interest	1	2	5	6
<b>EARNINGS (LOSSES) AVAILABLE TO PARENT</b>	<b>\$ 33</b>	<b>\$ 33</b>	<b>\$ (424)</b>	<b>\$ 68</b>

**ALLEGHENY ENERGY SUPPLY COMPANY, LLC AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**  
(Unaudited)

(In millions)	September 30, 2016	December 31, 2015
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash and cash equivalents	\$ 1	\$ 2
Receivables-		
Customers, net of allowance for uncollectible accounts	4	10
Affiliated companies	118	102
Notes receivable from affiliated companies	101	130
Materials and supplies	35	35
Other current assets	23	9
	<u>282</u>	<u>288</u>
<b>PROPERTY, PLANT AND EQUIPMENT:</b>		
In service	2,632	2,596
Less — Accumulated provision for depreciation	<u>298</u>	<u>298</u>
	2,334	2,298
Construction work in progress	<u>36</u>	<u>44</u>
	<u>2,370</u>	<u>2,342</u>
<b>INVESTMENTS:</b>		
Investment in unconsolidated affiliate	21	21
Notes receivable from affiliated companies	<u>74</u>	<u>74</u>
	<u>95</u>	<u>95</u>
<b>DEFERRED CHARGES AND OTHER ASSETS:</b>		
Goodwill	—	553
Intangible assets	101	126
Other	<u>6</u>	<u>8</u>
	<u>107</u>	<u>687</u>
	<u>\$ 2,854</u>	<u>\$ 3,412</u>
<b>LIABILITIES AND CAPITALIZATION</b>		
<b>CURRENT LIABILITIES:</b>		
Accounts payable-		
Affiliated companies	\$ 18	\$ 9
Other	21	28
Short-term borrowings - affiliated companies	81	48
Accrued taxes	8	120
Accrued interest	15	9
Other current liabilities	<u>4</u>	<u>—</u>
	<u>147</u>	<u>214</u>
<b>CAPITALIZATION:</b>		
Member's equity-		
Member's capital	1,949	1,949
Accumulated deficit	<u>(937)</u>	<u>(513)</u>
Total member's equity	1,012	1,436
Noncontrolling interest	<u>64</u>	<u>59</u>
Total equity	1,076	1,495
Long-term debt and other long-term obligations	<u>593</u>	<u>593</u>
	<u>1,669</u>	<u>2,088</u>
<b>NONCURRENT LIABILITIES:</b>		
Accumulated deferred income taxes	838	922
Accumulated deferred investment tax credit	37	38
Other	<u>163</u>	<u>150</u>
	<u>1,038</u>	<u>1,110</u>
	<u>\$ 2,854</u>	<u>\$ 3,412</u>

**ALLEGHENY ENERGY SUPPLY COMPANY, LLC AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(Unaudited)

<i>(In millions)</i>	For the Nine Months Ended September 30	
	2016	2015
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net income (loss)	\$ (419)	\$ 74
Adjustments to reconcile net income (loss) to net cash from operating activities-		
Provision for depreciation	27	45
Amortization of purchase accounting adjustments	26	15
Deferred income taxes and investment tax credits, net	(86)	104
Goodwill impairment	553	—
Changes in current assets and liabilities-		
Accounts receivable	(10)	(2)
Materials and supplies	—	6
Prepayments and other current assets	(2)	—
Accounts payable	(1)	(47)
Accrued taxes	(110)	10
Accrued interest	6	6
Other	—	5
Net cash (used for) provided from operating activities	(16)	216
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
New financing-		
Short-term borrowings, net	33	—
Repayments-		
Short-term borrowings, net	—	(53)
Return of capital payments	—	(20)
Cash dividends paid to non-controlling shareholder	—	(12)
Net cash provided from (used for) financing activities	33	(85)
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Property additions	(50)	(51)
Loans to affiliated companies, net	29	(88)
Proceeds from asset sales	—	10
Other	3	(2)
Net cash used for investing activities	(18)	(131)
Net change in cash and cash equivalents	(1)	—
Cash and cash equivalents at beginning of period	2	2
Cash and cash equivalents at end of period	\$ 1	\$ 2

21.2.d - Mortgage Descriptions

Mon Power, Potomac Edison – as of 9-30-2016

**Mon Power:** 7,000,000 shares of common stock authorized with a par value of \$50 and 5,891,000 shares are outstanding. 940,000 shares of preferred stock authorized with a par value of \$100 and 0 shares are outstanding; the terms of preference would be specified at issue.

**Potomac Edison:** 26,000,000 shares of common stock authorized with a par value of \$0.01 and 22,385,000 shares are outstanding. 10,000,000 shares of preferred stock authorized with a par value of \$0.01 and 0 shares are outstanding; the terms of preference would be specified at issue.

**Monongahela Power:** Indenture, dated as of August 1, 1945, between Monongahela Power Company, as issuer, and Citibank, N.A., as trustee (as successor to City Bank Farmers Trust Company), as supplemented by the first through one hundred second supplemental indentures thereto. The indenture provides a lien upon all of the Monongahela Power's property, both real and personal, with some minor exceptions, including cash, accounts receivable, common stock, inventory and supplies and electric energy. There is not a specific dollar limit on the amount of indebtedness that can be secured under the Indenture. If Monongahela Power wishes to issue new bonds, it must satisfy two indenture requirements. First it must demonstrate that it has sufficient net earnings for the previous 12 month period that are equal to not less than twice the amount of annual interest of any outstanding bonds plus the annual interest of the proposed new bonds. Second, the Monongahela Power must pledge to the Trustee sufficient property additions that have not been previously pledged, that constitute 10/6 or approximately 160% of the proposed new bond issue. The Trustee's address is as follows: Danny Lee, Vice President, Citi Agency & Trust, 388 Greenwich Street, 14th Floor, New York, NY 10013.

**The Potomac Edison Company:** Indenture, dated as of October 1, 1944, among The Potomac Edison Company, as issuer, the Bank of New York Mellon, as trustee (as successor to Chemical Bank & Trust Company), as supplemented by the first through one hundred twentieth supplemental indentures thereto. The Indenture provides a lien upon all of Potomac Edison's property, both real and personal, with some minor exceptions, including cash, accounts receivable, common stock, inventory and supplies and electric energy. There is not a specific dollar limit on the amount of indebtedness that can be secured under the indenture. If Potomac Edison wishes to issue new bonds, it must satisfy two indenture requirements. First it must demonstrate that it has sufficient net earnings for the previous 12 month period that are equal to not less than twice the amount of annual interest of any outstanding bonds plus the annual interest of the proposed new bonds. Second, Potomac Edison must pledge to the Trustee sufficient property additions that have not been previously pledged, that constitute 10/6 or approximately 160% of the proposed new bond issue. The Trustee's address is as follows: Raymond O'Neil, Vice President, Client Service Manager, BNY Mellon Corporate Trust, 500 Ross Street, 12th Floor, Pittsburgh, PA 15262.

## 21.2.e - Bonds and Credit Facilities

**Monongahela Power**

Description	Interest Rate	Date Issued	Date of Maturity	Principal Amount	Ending Balance 9/30/16	Semi-Annual Cost
Unsecured Notes - Affiliated Company						
2007 Harrison Series D	5.500%	10/22/2007	10/15/2037	73,500,000	73,500,000	2,021,250
					73,500,000	2,021,250
First Mortgage Bonds						
2006 Series	5.700%	9/22/2006	3/15/2017	150,000,000	150,000,000	4,275,000
2013 Series	4.100%	11/27/2013	4/15/2024	400,000,000	400,000,000	8,200,000
2013 Series	5.400%	11/27/2013	12/15/2043	600,000,000	600,000,000	16,200,000
				1,150,000,000	1,150,000,000	28,675,000

**Potomac Edison**

Description	Interest Rate	Date Issued	Date of Maturity	Principal Amount	Ending Balance 9/30/16	Semi-Annual Cost
First Mortgage Bonds						
2006 Series	5.800%	10/23/2006	10/15/2016	100,000,000	100,000,000	2,900,000
2014 Series	4.440%	11/25/2014	11/15/2044	200,000,000	200,000,000	4,440,000
2015 Series	4.470%	8/17/2015	8/15/2045	145,000,000	145,000,000	3,240,750
				445,000,000	445,000,000	10,580,750



21.2.f - Other Indebtedness as of September 30, 2016

**Monongahela Power**

As of 9-30-2016, Monongahela Power Company had a \$138,833,186 borrowing position in the money pool.

**Potomac Edison**

As of 9-30-2016, The Potomac Edison Company had a \$24,335,373 borrowing position in the money pool.

21.2.g - Amount of Interest paid during previous calendar year and rate thereof - Data provided as of 9-30-2016

*(Excludes securitized debt)*

	<b>Potomac Edison</b>		<b>Monongahela Power</b>	
	<u>Amount (\$)</u>	<u>Rate (%)</u>	<u>Amount (\$)</u>	<u>Rate (%)</u>
Credit Facility	\$ -	0.0000%	\$ -	0.0000%
Money Pool	\$ 398,579	0.6144%	\$ 932,270	0.6144%
First Mortgage Bonds				
			\$ 1,881,250	5.38%
	\$ 5,800,000	5.80%	\$ 8,550,000	5.70%
	\$ 8,880,000	4.44%	\$ 16,400,000	4.10%
	<u>\$ 6,445,492</u>	<u>4.47%</u>	<u>\$ 32,400,000</u>	<u>5.40%</u>
	\$ 21,125,492		\$ 59,231,250	
Unsecured Notes - Affiliated Company			\$ 4,042,500	5.50%

## 21.2.h - Rate and Amount of dividends paid upon each class of stock during previous five years

**Monongahela Power Company Dividends to Parent**

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016*</u>
Common Stock	\$ 65.0	\$ -	\$ -	\$ 90.0	\$ 40.0

**The Potomac Edison Company Dividends to Parent**

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016*</u>
Common Stock	\$ 35.0	\$ 35.0	\$ -	\$ 55.0	\$ 25.0

\* As of 09/30/2016

**Monongahela Power Company Acquisition of Allegheny Energy Supply Company, LLC's  
Ownership Interest in Pleasants Generation Station  
December 31, 2016**

	<u>FERC Account</u>	<u>Debit</u>	<u>Credit</u>	<u>Entry Description</u>
A	102 Electric Plant Purchased or Sold	195,000,000		To record the acquisition of the Pleasants Generation Station at the purchase price, materials and supplies inventory and fuel stock at cost (net of reserve), less par value of associated pollution control bond and assumption of the asset retirement obligation associated with the station.
	151 Fuel Stock	18,073,538		
	154 Plant Materials And Operating Supplies (net of reserve)	6,845,040		
	223 Advances From Associated Companies		142,000,000	
	230 ARO Liability		1,766,436	
	131 Cash		76,152,141	
B	101 Electric Plant In Service	1,444,365,200		To record clearing of account 102 to original cost and accumulated depreciation and electric plant acquisition adjustments, which reflects impairments partially offset by purchase accounting adjustments recorded by Allegheny Energy Supply Company.
	106 Completed Construction not Classified	55,349,045		
	102 Electric Plant Purchased or Sold		195,000,000	
	107 Construction Work In Progress	22,668,299		
	108 Accumulated Provision For Depreciation Of Electrical Utility Plant		745,369,964	
	114 Electric Plant Acquisition Adjustments		582,012,580	
C	190 Accumulated Deferred Income Taxes	33,120,307		To record a deferred tax asset for the excess of the transfer price over the assumed tax basis, and to recognize accumulated deferred income taxes representing the net book value over the original tax basis -- consistent with FERC regulations on accounting for deferred income taxes on intercompany property transfers.
	282 Accumulated Deferred Income Taxes - Other Property		33,120,307	